Textile World

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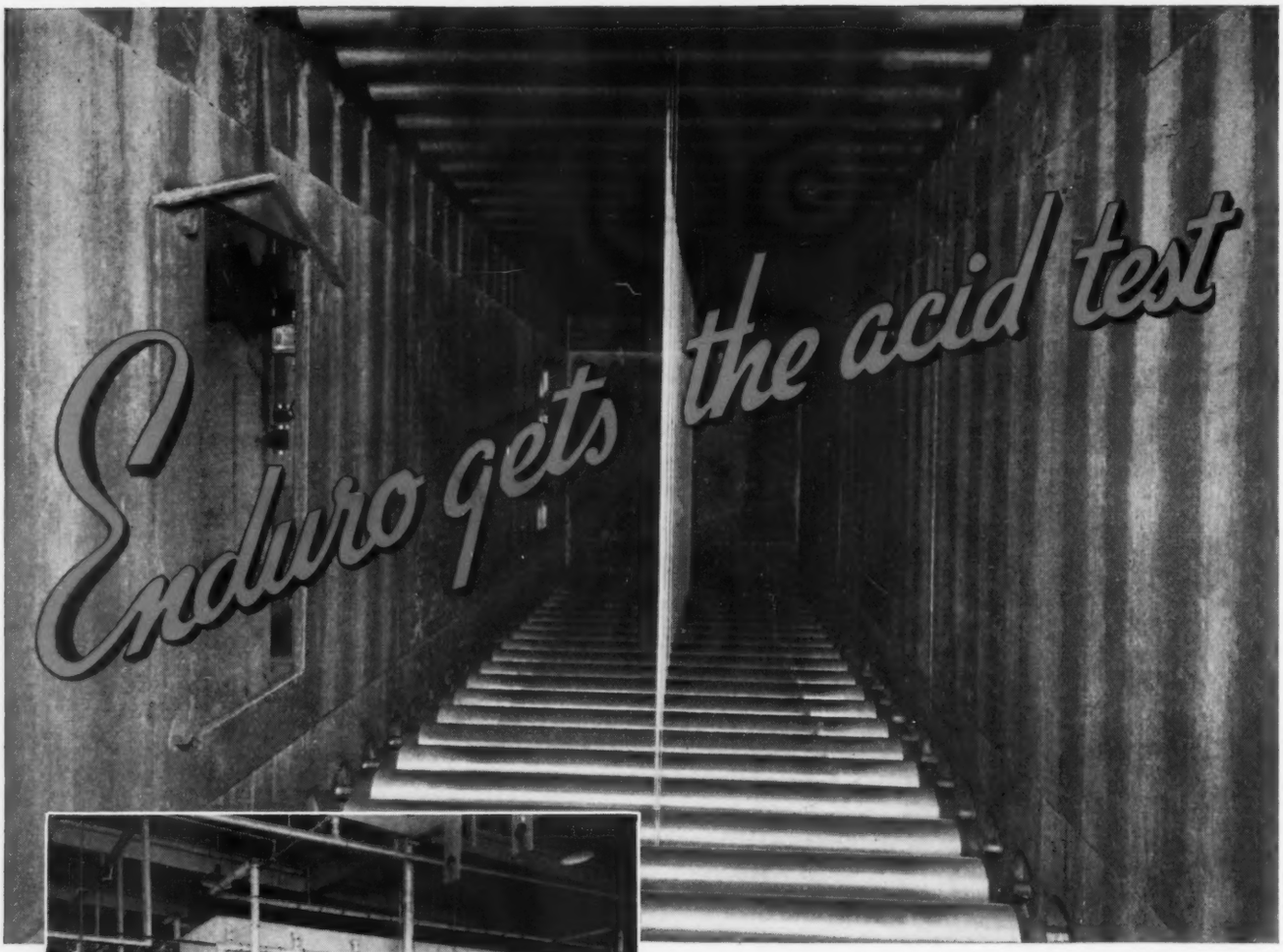

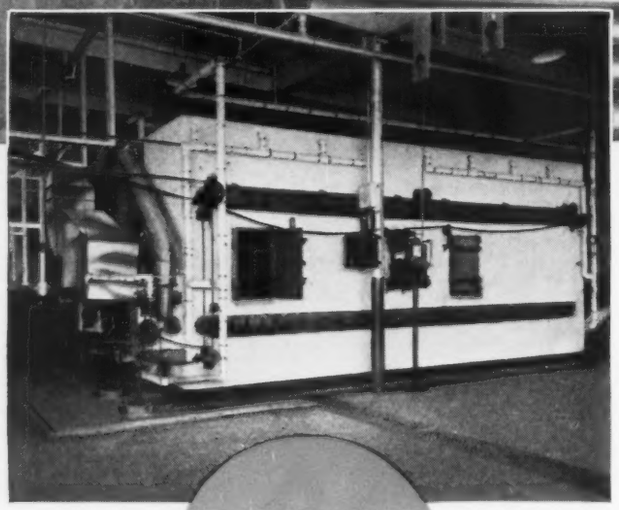

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Textile World

NOVEMBER, 1938

DOUGLAS G. WOOLF, *Editor*

Eventually—and Maybe Soon

OUR suggestion for closer coordination of the trade associations in the textile industry will have its fifth anniversary this December. It has just received a most welcome birthday gift from Dr. C. T. Murchison, president of the Cotton-Textile Institute, in the form of public and forceful espousal of the general type of correlation we have been urging. We feel so strongly about the importance of this particular move, that we must admit to a little pride (whether pardonable or not) in the fact that sentiment in favor of it is crystallizing in the industry.

It is therefore timely to summarize the thinking back of the idea.

•

In our December, 1933, issue we recommended the creation of an American Textile Institute, representative of all branches and consolidating the medley of trade associations serving this field. Our reason for bringing it up at that time was the lesson taught by the then-current NRA experiment, with regard to the crazy-quilt of jurisdiction under the various codes and code-authorities.

"The truth is that the make-up of the textile industry is gradually under-going a radical transformation and we are slow to adjust ourselves to it," we stated on this page. "Not so many years ago, the individual branches were practically air-tight compartments; today many of the lines of demarcation are being eliminated. A manufacturer is not necessarily interested solely in cotton or wool or silk or rayon; nor is he necessarily concerned exclusively with spinning or weaving or knitting or finishing. Various combinations of the different fibers and different processes are often found under one roof. This was revealed strikingly during many of the code-hearings in Washington—and in fact was the impelling reason why, for example, it was found necessary for the cotton-textile code gradually to adopt more and more step-children."

History is repeating itself—and today the establishment of textile committees under the wage-hour act, and the definition of their jurisdiction, are running into exactly that same type of problem. That is why Dr. Murchison brings up the question at this time. Cotton, rayon and silk are bound together into a field of common interest, he points out, "and Governmental recognition of this unity was made when Administrator Andrews decided to bring cotton, rayon and silk within the jurisdiction of Industry Committee No. 1."

"It next becomes inevitable and essential," flatly declares Dr. Murchison, "that the central trade associations of these three groups closely correlate their activities in all matters having to do with Government regulatory policy. . . . One cannot escape the inference that the time will eventually come when the members of the Cotton-Textile Institute, the National Rayon Weavers Association and the National Federation of Textiles will wish to consider some formal arrangement whereby appropriate correlation of the activities and policies of these three associations may be put on an enduring and officially recognized basis."

Fortunately Dr. Murchison practices as well as preaches coordination. In his own division of the industry he has set up conferences among the executives of all the regional, State and functional associations. The latest was held last month, and was inspiring in its revelation of the real opportunities in united thinking and action.

•

Since advancing our original idea of an American Textile Institute, we have pointed out repeatedly in these columns that an intermediate step might—and possibly should—be the formation of a council composed of representatives of the various textile associations. Dr. Murchison's proposal, we feel, is an appeal for a definite step in that particular direction.

And so we say once more—but this time with more hopefulness than at any time during the last five years:

Eventually—Why not now?

THE EDITOR SAYS

On the Up-Grade

AFTER hesitating, in common with the rest of the world, in September to see if hell was going to break loose, the textile industry has resumed its forward march.

The come-back since the shift in its fortunes started in July, has been dramatic. The average monthly textile mill activity in the third quarter of this year (according to TEXTILE WORLD'S index), was 28% higher than the monthly average for the first half of the year. And remember that this up-trend was *contra-seasonal*. October statistics, when available, will show an intensification of this movement.

Barring unforeseen developments —and any sane man has to use this qualification nowadays—we are in for a continued textile up-swing for the rest of this year, and through the first half of 1939. Stopping our prediction at that date is not meant to imply our expectation of a decline then, but rather that we believe that relatively short-term forecasting is safer under present conditions.

In any event, we see an almost certainty of nine months of good textile business. It is our belief that textile companies, as well as concerns selling to the textile industry, would do well to adjust themselves *quickly* to this new tempo in textiles. There is a tendency to cling to the defeatist psychology of the first half of this year. That is a sure way to go nowhere fast. Sales executives, particularly, are urged to take note.

Mr. Wallace's Latest Fantasy

THIS was off the record five years ago but "now it can be told." We were one of a group of editors attending a confidential conference with Secretary of Agriculture Henry Wallace. He had painted in glowing colors the agricultural Utopia which would result from the "parity price" plan and other phases of the AAA program. Quite innocently, we asked: "How much is this going to cost, Mr. Secretary?" His face clouded for a moment, but he made a neat comeback. "That's a Chamber of Commerce question," he said. All our pals went back on us by laughing uproariously; we blushed; and the Secretary looked very pleased with himself.

We suppose the same answer would be made today if one tried to learn something about the proposed cost of Mr. Wallace's latest fantasy: the subsidized processing of certain agricultural commodities for sale, at low prices, to low-income families. In fact, he who dared to ask the question would have a double cause for blushing, because here the cause of sweet charity is involved. In fact, Secretary of the Treasury Henry Morgenthau—ordinarily a foe of subsidies but an ardent supporter of his colleague's plan—struck that note at a press conference last month. "It isn't a question of being profitable—it's a question of being humane," he told an inquisitive reporter.

So there's a tough combination: helping the farmer and helping the needy. Who dares to buck it with "Chamber of Commerce questions"?

And yet that same question must be asked again: How much will it cost? Not only in dollars and cents but in further ruin to cotton agriculture. Because the cost has not been limited to the processing taxes paid at first by manufacturers, nor the benefit checks mailed to farmers. The net result has been a record carryover; almost record low prices; accompanied by a steady encroachment from other cotton-producing countries upon our share of the world trade.

And, yet, the Secretary of Agriculture is ready to try another miracle. Why? To help the farmer? To help the needy? No. Merely because the farm program is at desperate straits, and something must be done. Anything.

Understand, we do not claim that Mr. Wallace figures it out this way. We are confident he is utterly sincere in his latest attempt. In fact, we'd almost say that he is lamentably sincere. He is so fanatical that he is completely blind to defects in his plans. So long as he is Secretary of Agriculture, and is permitted to have his own way, there will be no retraction. There will be no fulfillment of the promise made by President Roosevelt when he said in 1933, with reference to the AAA: "I tell you frankly that it is a new and untrod path. . . . If a fair administrative trial of it is made and it does not produce the hoped-for results, I shall be the first to acknowledge it and advise you."

It is to laugh . . . No, we take that back. It is to cry.

As for the "poor subsidy"—which is the headline-writer's title for Mr. Wallace's brain-child—it can be disposed of very briefly.

First, it is utterly stupid to mix the farm problem with the relief problem. Those are two separate problems. Each is difficult enough in its own right. When mixed, the chance of solving either is practically eliminated. Messing up relief, to save the Department of Agriculture's face in its present desperate situation, is not our idea of statesmanship.

Second, the administrative problems connected with a two-price plan of this nature are staggering. The bureaucracy entailed in connection with both the manufacture and distribution of the goods involved, is horrible to contemplate.

Third, the plan is not even an approach to a solution of the farm problem. It is merely one more emergency spasm, one more white rabbit.

Finally, it carries—in our opinion—more inherent threat to our still-existing economic system than any plan proposed or put into practice by the Administration to date.

If the country is made to swallow this one, it will be just too bad.

Wage-Hour Law "Velvet"

ONE of the most important comments made by Elmer Andrews, wage-hour administrator, has received too little emphasis. Here it is, in question-and-answer form, from the record of Mr. Andrews' remarks at the luncheon-meeting of the Southern Combed Yarn Spinners Association:

Q: Will the textile committee of 21 have power to eliminate third shift—or in other words regulate machine production hours?

A: Technically, the Industry Committee would not have, but I hope that they will because I think if they made suggestions or recommendations as to the hours, as to the third shift, that the spirit of industry will be such that people will say, "Here is a group of representative men who say this is a good thing for us." Even though they could not put a person in jail for not following the recommendations, it will go a long way in educational value in industry.

In other words, Mr. Andrews suggests that corollary good may come out of the operation of the wage-hour act—and that the broad-gaged committee may suggest, out of its study of the industry's needs, certain ways out, by way of voluntary action.

This is not an untrod path for the textile industry. It followed it during the NRA and despite headaches

left over from that experience, most fair-minded manufacturers will call the net result good. Witness the voluntary maintenance of code standards for years after the invalidation of NRA!

Now, there are two schools of thought in the industry concerning the feasibility of control of machine production. Consequently, not all will cheer the thought of a new attempt in that direction. Personally, we favor it—and we believe that practice of it to some extent over the last several years has saved the industry from much greater grief than it has actually experienced. But there are other points of view.

However, we feel that all *will* cheer the possibility of exploring new avenues of industrial self-government. Mr. Andrews has pointed out a chance for what might be termed "velvet" under the wage-hour law.

***

One more tribute to Mr. Andrews: The simplicity and sincerity which he displayed at the N. A. C. M. meeting in Boston won the hearts of New Englanders just as it had captured the Southerners the week previous. And when he said he proposed to "avoid the slightest suggestion of a circus atmosphere," he cited an accomplished fact. The absence of a circus atmosphere was the immediate impression we received when we first called on Mr. Andrews. There was nothing to bring back memories of that awful summer of 1933.

The textile industry likes Mr. Andrews and hopes its feeling is reciprocated. Of course, we imagine he is realist enough to know that the honeymoon can't last forever. However, here's hoping that he and the industry can settle down to relatively smooth married life.

Anyone Get Us Wrong?

WE made a statement on this page last month which may have been susceptible of mis-interpretation. Referring to the Textile Committee of 21 under the wage-hour law, we said: "The so-called public members are all excellent citizens. The fact that this group is heterogeneous is not Mr. Andrews' fault, but the fault of the provision of the act which provides for this type of representation. In our opinion, an impartial chairman would have been far superior."

It may be that some readers thought we were questioning the impartiality of the chairman of the committee. Nothing could be further from our intent. Donald Nelson's reputation in the textile industry is such that we can't imagine anyone getting us wrong.

What we were trying to suggest was that a *single* "impartial chairman"—using this title as one which has come to have fairly wide use in industry—would be more effective as the balance of power than would seven members of the so-called "public."

FROM LETTERS TO THE EDITOR

"Can a Textile Man Make Money?"

"A real statesman wrote the lead editorial appearing in your October issue and I wish you would accept my warmest congratulations. I have never seen a better analysis so constructively presented."—Edward T. Picard, *Chief, Textile Division, Department of Commerce.*

"Your editorial 'Can a Textile Man Make Money?' is a dandy. It hits the narrow fabrics industry right between the eyes. After studying this industry for years, we agree with you 100% on your way-out program. May we have your permission to send out a bulletin quoting your editorial with credit, of course?"—Wilwyn Herbert, *Secretary, Narrow Fabrics Institute Inc.*

Public Relations Section

"It was a real inspiration to read the public relations section of your October issue. Moreover, it was timed exceedingly well to provide just the right kind of thinking for our meeting (of heads of associations) to be held on October 25. On that occasion much of the discussion will be devoted to the same topic which you have so ably introduced."—Claudius T. Murchison, *President, The Cotton-Textile Institute, Inc.*

"I had intended to write you commendation on the public relations section. This is a field in which the industry as a whole has had little experience and your presentation was excellently conceived for the purpose of provoking interest, study and action."—W. Ray Bell, *President, The Association of Cotton Textile Merchants of New York.*

"Certainly you are on the right track with the publicity on industrial relations. It is very important for any industrial company to make the handling of their industrial relations and their industrial relations staff one of major importance."—Henry P. Kendall, *President, The Kendall Company.*

"I am wholeheartedly in sympathy with the public relations policy which Textile World has recommended, and I hope that with your leadership our industry may undertake to sell itself to the public and thereby acquire the general respect and confidence of the millions who are our employees and our customers."—T. M. Forbes, *Secretary, Cotton Manufacturers Association of Georgia.*

"I read the 'Public Relations' section with much interest last night, and I think that McGraw-Hill is rendering a real service by paramounting this special in their various magazines. . . . I am happy to say that we can almost use your pages 72 and 73 as a check-list, as we have done, or are doing, most of these things."—Luther Hodges, *General Manager, Marshall Field & Co. Manufacturing Division.*

"I have intended for the last several days to write to you and congratulate you upon the public relations section of the Textile World for 1938. I think this is perhaps the most important section in the magazine and I am sure it could not have appeared at a more opportune time. I am hoping that our entire industry will read it and be actively influenced by the suggestions contained therein."—W. M. McLaurine, *Secretary and Treasurer, American Cotton Manufacturers Association.*

"I think that this public relations campaign which you are putting on in all of the McGraw-Hill Publications is very timely indeed. I am sure it will do a great deal of good."—George R. Urquhart, *President, Manville Jenckes Corp.*

"The supplement on public relations for industry is very interestingly presented and is most timely in that the subject is being given a great deal more consideration these days than at any time in the past. No one can question the desirability of the thesis offered."—Spencer Love, *President, Burlington Mills Corp.*

"I think that the work you are doing in bringing to the forefront of management's mind the question of public relations is splendid, and I wish you every success in this activity."—Fuller E. Callaway, Jr., *President, Callaway Mills.*

"I wish to compliment you on your excellent series of articles under the heading, 'Public Relations for Industry.' The program outlined is undoubtedly forward looking and it is to a great extent essential to keep abreast of the trend in Government and labor."—E. E. Groves, *Treasurer, Groves Thread Co., Inc.*

"I have taken the position for some time, as you know, that the textile industry was making progress. They have nothing to hide, and we should come out in the open and give the true facts about our industry, and stand on those facts."—T. M. Marchant, *President, Victor Monaghan Co.*

"It would be fine if we could get over to the public the attitude that most of the industry assumes toward its employees and all the different things that it is doing in connection with its employees."—Hyman L. Battle, *Treasurer and Manager, Rocky Mount Mills.*

"We note your articles on Public Relations Program. As weavers of textile fabrics, we are much interested in your articles. We have taken steps along these lines, and have formed an employee-employer committee council. To date, we have not been able to find sufficient

(*Continued on page 111*)

NEWS OF THE MONTH

S.T.A. Begins Fall Activities

During the last month, several divisions of the Southern Textile Association have discussed varied manufacturing problems at their fall technical sessions.

The first meeting took place at Gastonia, N. C., where the Gaston County Division went into all phases of spinning long-staple cotton. A feature of the program was the presentation of a paper on modern trends in air conditioning by J. R. Henderson, sales engineer, Parks-Cramer Co., Charlotte, N. C. Marshall Dilling, for many years chairman of this division, was reelected to his old post. A new executive committee was named, consisting of A. P. Richey, F. C. Mosteller, Charles Ward, George Grice, H. H. Roberts, and Mr. Dilling.

The Carding and Spinning Section of the South Carolina Division convened Oct. 15 at Greenville, S. C. Guest speaker was Dr. Wm. P. Jacobs, secretary of the Cotton Manufacturers Association of South Carolina, who urged the mill men to take a greater interest in public relations of the textile industry. Robert Stutts, superintendent of Fountain Inn and Simpsonville plants of Woodside Cotton Mills Co., led the carding discussion. W. F. Morton, American Spinning Co., was in charge of the spinning session. J. A. Lyons, superintendent of Orr Cotton Mills, Anderson, S. C., chairman, presided.

The Eastern Carolina Division also met on Oct. 15 at the Erwin Auditorium, West Durham, N. C. J. L. James is chairman of this group.

On Oct. 22, the Northern North Carolina-Virginia Division convened at the Broad St. Graded School in Burlington, N. C. A feature of the program was a discussion of full-fashioned hosiery problems, in addition to the usual cotton carding and weaving topics. L. J. Rushworth, president of the S.T.A., was scheduled to open the meeting with a short address. F. R. Owen, of Burlington, briefly discussed the hosiery industry.

The Weaving and Slashing Section of the South Carolina Division met Oct. 22 at Spartanburg, S. C. The gathering was opened by Governor-elect Burnett R. Maybank, of Charleston, S. C., who assured the mill men that he is going to do everything possible to protect industry in the State when he takes over the Governorship. R. E. Littlejohn, of Drayton Mills, Spartanburg, S. C., led the technical discussion. J. A. Lyons, chairman of the South Carolina Division, presided.

Discuss Futures Change

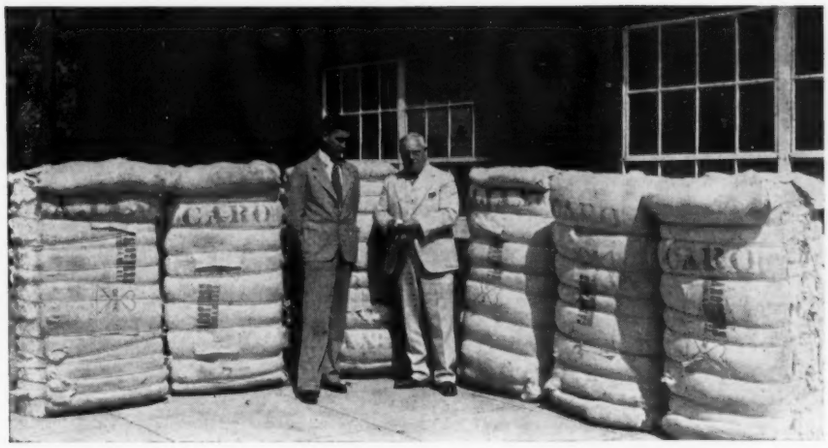
A proposal that the contracts for the future delivery of cotton on the futures exchanges be changed to allow full premiums for certain staple lengths over 7/8" was discussed at length at a meeting of representatives in the cotton trade and government officials, held at the New York Cotton Exchange Oct. 27. Resolutions by representatives of cooperatives and shippers were favorable to the proposed changes, while resolutions submitted by manufacturers associations were opposed. At the conclusion it was decided to form a small committee, representing manufacturers, shippers and cotton exchanges, to consider the matter further, with a view to arriving at a definite solution of the problem and a common ground of agreement.

Those representing textile organizations included A. K. Winget, W. M. McLaurine, Henry Roediger, representing American Cotton Manufacturers Association; H. H. Greene and Dwight M. Wilhelm, Alabama Cotton Manufacturers Association; Fuller E. Callaway, Jr., T. M. Forbes, T. I. Lewis, B. J. Kane and B. A. Dodd, Cotton Manufacturers Association of Georgia; William A. Floyd, Cotton Manufacturers Association of South Carolina; Russell T. Fisher, National Association of Cotton Manufacturers; Paul B. Halstead and H. E. Michl, Cotton-Textile Institute, Inc.; J. C. Roberts and Mildred G. Barnwell, Southern Combed Yarn Spinners Association.

Whitin Heads Rayon Weavers

Optimism was the keynote of the annual meeting of the National Rayon Weavers Association, held Oct. 26, at the Harvard Club, New York. A broad picture of progress was etched by C. W. Dall, president of the association, in his annual report. Among the chief points stressed by Mr. Dall were: Improved quality rather than increased volume should be the goal of the rayon weavers during 1939; opportunities in the spun rayon field, especially as regards men's wear, are increasing steadily; indications point to continuation of the economic improvement noted in recent months. The association elected Paul Whitin, of the Paul Whitin Mfg. Co., Northbridge, Mass., as chairman of the board succeeding R. E. Henry of Dunean Mills; George M. Wright, Republic Cotton Mills, first vice-president; Allan Barrows, Gosnold Mills, New Bedford, second vice-president. Mr. Dall was reelected to his triple post of president-secretary-treasurer.

The new $435,000 Clemson (S. C.) College textile building shown above was turned over to the school authorities for occupancy Sept. 1, and already is being used by 400 students. The four-story building is of modern brick, steel and concrete construction, and contains over 128,000 sq. ft. of floor space. There are 18 class rooms, 23 different laboratory rooms, and a number of offices for the faculty. In addition, the top floor has a special room for cotton grading equipped with plate glass windows on the north side. On the same floor is an auditorium seating 250 persons. All types of preparatory, weaving and finishing machinery are being installed, and there is space for wool manufacturing equipment to be added as soon as feasible. A committee of South Carolina manufacturers is working on a plan which, with the cooperation of machinery manufacturers, will make possible the addition of much of the desired equipment within a relatively short time. In addition to H. H. Willis, director, there is a faculty of 14 teachers. Also, there are two skilled mechanics who look after the machinery. Engineering and architectural work was handled by J. E. Sirrine & Co., Greenville, S. C. Construction was by Daniel Construction Co., Anderson, S. C.



THE FIRST BALES of cotton to come out of the Delta covered with cotton baling and tied with cotton ropes. They are shown at the Green River Mills warehouse, Tuxedo, Miss. On the right is R. W. Boys, president and treasurer of the mill and on the left is W. M. Melton, superintendent. Both attest that the cotton came through in perfect condition.

School Deans Meet

The fall meeting of the textile school deans, under the auspices of the Textile Foundation, was held in New York last month. Dr. Frederick M. Feiker presided. Speakers included Richard S. Cox, Philadelphia Textile School; Mrs. Maud Scholle, Pepperell Mfg. Co.; Dr. W. E. Emley, Department of Commerce; Alston H. Garside, New York Cotton Exchange; Dr. H. E. Michl, Cotton-Textile Institute; Dr. Norris Brisco, New York University; Sylvan Stroock, S. Stroock & Co.; F. S. Blanchard, Pacific Mills; H. S. Davis, University of Pennsylvania; H. H. Willis, Clemson College. The following textile executives served as "hosts" to four groups of the deans at luncheon: Robert Glassford, Bliss Fabyan & Co.; Frederic A. Williams, Cannon Mills; Elroy Curtis, Southeastern Cottons Inc.; Theodore Wood, North American Rayon Co.

In addition to the deans of the schools, the following representatives of the Textile Foundation were present: Franklin W. Hobbs, chairman; Frank D. Cheney, director; Edward T. Pickard, secretary; and Harry J. Robinson.

Textile Chemists Plan Annual Meeting

Plans for the annual meeting and convention of the American Association of Textile Chemists & Colorists, which is to be held Dec. 2 and 3, at the Atlanta-Biltmore Hotel, Atlanta, Georgia, are rapidly being completed. The convention will open Friday morning. Dec. 2, with a meeting of the council and research committee. The first technical session will be held Friday afternoon. The second technical session and a business meeting will be held on Saturday morning. Saturday afternoon will be devoted to sight-seeing trips, and the convention will close with a banquet to be held Saturday evening, at the Atlanta Athletic Club. Robert W. Philip, editor of *Cotton*, Atlanta, Ga., is chairman of the Southeastern Section, hosts for the convention.

Fisher and West Speak

Russell T. Fisher, president of the National Association of Cotton Manufacturers, and Robert R. West, vice-president of the American Cotton Manufacturers Association, spoke briefly at the cotton textile industry dinner under the auspices of the Textile Square Club, in New York on the eve of the annual meeting of the Cotton-Textile Institute. Representatives of practically all of the allied associations were included in the guests at the speakers' table.

Bigelow-Sanford Wage Cut Set at 5%

The decision of the New York State Mediation Board in the Bigelow-Sanford Carpet Co.'s labor controversy, following its 10% wage cut last May 9, was handed down Oct. 5. It was to the effect that the 6,000 workers should take a 5% cut, the difference being paid to the workers retroactively to May 9. Arthur S. Meyer was arbitrator. The decision is binding upon both parties.

Outerwear Problems

Style promotion, better pricing, wider knowledge of costs—these are among the chief needs of the outerwear industry, it was decided at a conference of industry leaders held at Niagara Falls, N. Y. early last month. The meeting, called by the National Knitted Outerwear Association, heard talks by Wm. Portner, of Franklin Sweater Mills, Ralph M. Jones, Utica Knitting Mills, Harold R. Lhowe, chairman of the conference, I. B. Davies, Bradley Knitting Mills, and others.

Halstead Speaks to Canvas Trade

"Expanding Markets for Canvas Goods" was the subject of the talk by Paul B. Halstead, secretary-treasurer of the Cotton-Textile Institute, before the National Tent and Awning Manufacturers Association in Detroit, Oct. 11. After outlining some of the most recent plans for promotion of cotton goods, Mr. Halstead pointed out several major opportunities for greater use of awnings and tents. He suggested a cooperative effort on the part of cotton mills and canvas goods manufacturers toward that end.

Two New Researches

Two important new researches were scheduled to be announced at the annual meeting of the U. S. Institute for Textile Research in New York, Nov. 10. One was a study of Textile Inventory Policies and Statistical Guides, to be financed by the Textile Foundation, and conducted under the auspices of the Institute's committee on economic research. The other was a scientific study of the warp sizing of cotton and spun rayon, to be cooperatively financed by the Institute and to be conducted in southern mills and laboratories.

N.C. Meetings

Two North Carolina meetings will be reported in our next issue. They are the 32d annual convention of the Cotton Manufacturers' Association of North Carolina at Pinehurst, Nov. 3 and 4 and the ninth annual golf tournament of the Carolina Yarn Association, also at Pinehurst, Oct. 28 and 29.

Factors Work for Red Cross

A Factors Group, headed by J. Frederick Talcott, of James Talcott, Inc., as chairman, has been formed to campaign in the 22nd annual membership Roll Call of New York Chapter, American Red Cross, from Armistice Day to Thanksgiving. In urging full enrollment, Chairman Talcott issued this statement: "When

hurricane and flood brought the year's worst disaster to our doors, we had personal reason to appreciate the Red Cross. It responded promptly with help. Red Cross workers aided in rescues." Mr. Talcott listed other Red Cross activities and asked support now for this great cause.

Knitting Attachment for Looms

Reports last month of the development of a new attachment to be applied to looms to permit production of combination woven-knitted fabrics have aroused much interest in the trade. This device—which was invented by Warren P. Griffiths, and is to be manufactured by Fidelity Machine Co., Philadelphia—is designed to put a knitted face on a woven fabric. One advantage of such fabrics is that they have the appearance of knit goods without the tendency toward excessive stretching. It is stated that it will be at least four or five months before the attachment is available commercially.

Drysol Process in Commercial Use

The Drysol process for rendering wool non-shrinkable, developed by A. J. Hall, and described in detail in the December, 1937, issue of TEXTILE WORLD, is now being used commercially in this country in the production of non-shrinkable blankets and athletic socks. A complete line of blankets treated by the Drysol process was displayed by the North Star Woolen Co., Minneapolis, Minn., at the National Hotel Exposition held last month in New York. Merriman & Mittom, Holyoke, Mass., have recently announced commercial production of all-wool, Drysol, unshrinkable athletic socks.

Heat-Resistant Cotton Tire Cords

Development of Heat-Resistant tire cords and the characteristics of such cords were discussed by Wm. D. Anderson, president Bibb Mfg. Co., at a convention of the National Association of Independent Tire Dealers, held Oct. 12, in New Orleans. Mr. Anderson stated that it was while his company was experimenting with low-stretch, low-gage, and high-density cord, that the heat-resistant principle was discovered. The most startling characteristic of Heat Resistant cord is that when reduced to the bone-dry state, it has approximately 92% of the tensile strength it had when it contained the normal moisture content of 6½ to 7%. The superior lasting quality of the cord is due to the fact that under the high temperature conditions encountered by heavy-duty tires, the Heat Resistant cords deteriorate more slowly than is the case with ordinary tire cord.

Wm. D. Anderson said in conclusion, "I predict that no other fiber will ever successfully replace cotton in an automobile tire. No known fiber combines the remarkable tensile strength of cotton with its flexibility, its resiliency, and its ability to stand punishment."

Silk Rules Set

Modified in several particulars, the trade-practice rules for the silk industry which were tentatively accepted by the industry last spring, were promulgated this month by the Federal Trade Commission, and went into effect Nov. 4. The rules cover silk textile identification in all chief aspects, with particular reference to fabrics of mixed fiber content. The clause compelling disclosure by percentage of weighting content of silk fabrics, which had been opposed by the National Federation of Textiles, remained in the rules; however, to meet the Federation's objection that such detailed technical data would merely confuse the consumer, the commission added a modification permitting firms to state that weighting is "not over a certain percentage." Federation officials welcome the rules as help to the industry.

New Discontinuous-Filament Yarn

Tennessee Eastman Corp. this month confirmed reports of development of a new type of discontinuous filament acetate rayon yarn which will be placed on the market shortly. It is understood that the yarn will be sold under a brand name, which has not yet been chosen. The new yarn, according to spokesmen for the company, is made by a specially developed process of Tennessee Eastman based on the "Perlok" system of the Fiber Products Co. (TEXTILE WORLD, December, 1936), for which Eastman has a license. It has the appearance of filament yarn, with pliability of spun rayon yarn.

Cotton Loan

Commodity Credit Corporation announced recently that Government loans on cotton through Oct. 6 aggregated $22,472,249.70 on 484,418 bales. The average loan was 8.91 c.

Cottons Steady

Generally speaking, the tone of the cotton-textile market was encouraging during the last month despite a minor slackening in print cloths toward the last of the period. Wide sheetings and industrials were particularly good, reflecting interest in the bedspread and automobile industries. Denims strengthened, with one large manufacturer advancing the price ½¢ on 2.20s. There were a number of attempts to secure print cloths at ⅛¢ off quoted prices, but in most cases the mills held firm.

Service Standards for Rayon Underwear

Minimum serviceability standards for rayon knitted undergarments have recently been established by United States Testing Co., Inc., Hoboken, N. J. Standards include specifications for minimum bursting strength, weight, shrinkage, fastness to washing, measurements, workmanship, and freedom from finishing or loading materials.

New Equipment at English Show

A wide variety of new and improved equipment developed within the last two or three years was shown at the Textile Machinery Exhibition, held Oct. 12 to 22, in Manchester, England. Exhibitors included most of the leading British manufacturers of spinning, weaving, and finishing machinery, and auxiliary equipment and supplies. Frank Nasmith, managing director of Universal Winding Co. in the United Kingdom, was chairman of this year's exhibition.

Worsteds Fair; Woolens Lag

Men's wear fabrics for spring, 1939, opened around Oct. 6 with prices unchanged to 5 per yard off from basis prevailing on the current fall. By Nov. 1, there were two advances totaling 7½ to 15¢.

There is considerable market difference between worsteds and woolens, the former being the item in better demand. When prices descend and the differential narrows between woolens and worsteds, the clothier gives preference to the worsted. With standard all-worsted suitings as low as $1.27½, the woolen above 98 cents has to have some special feature.

Despite the woolen situation, there are two types of fabrics said to be in good style demand—coverts and tweeds. Carpets prices are to be advanced 5% Nov. 15.

To Increase Cotton Consumption

Appointment of a committee in the Department of Agriculture to develop specific proposals for getting more cotton into consumption, especially among persons of low income, was announced recently by Secretary Henry A. Wallace. The committee consists of Harry L. Brown, Mastin G. White, J. W. Tappe, Alfred Stedman, I. W. Duggan and Lawrence Myers, all with the department.

Japanese Worsted Yarn on Market?

Selling of Japanese worsted yarn in Rhode Island at low prices is charged by E. F. Walker, secretary of Rhode Island Textile Association. He states that Nippon Keori Kaisha has offered French-spun white worsted yarn of fine Australian wool at 40 cents to one dollar per lb. cheaper than similar American products can be sold.

Spun Rayon in Men's Underwear

Possibility that knitted rayon underwear for men, which suffered a black eye some years ago due to sleazy manufacture, may stage a successful comeback through use of spun rayon, was being discussed in the market this month. While trade leaders refused to disclose details, it is understood that experimental work in that direction is being carried on and that there are prospects of commercial application of spun rayon to men's underwear on a fairly extended scale soon.

Apparel Wool Stock Up; Carpet Down

Quarterly wool stock report of Bureau of Census discloses details as of Sept. 24, at which time total apparel wool stocks were 9% higher than a year ago and carpet wool stocks 40% less than a year ago. Current apparel wool stocks were 147,279,000 lb. scoured basis, of which 87,190,000 were held by dealers and 60,089,000 by mills. Carpet wool stocks were 26,782,000 lb. scoured, held 3,087,000 by dealers and 23,695,000 by manufacturers. Tops stocks at 26,208,000 lb. were 12% less than a year ago, and noils at 8,748,000 were 28% less.

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Tops Steady; Wool Active

Business in Boston wool market slowed slightly in late October as firming prices tended to restrict purchases. The rise during early October averaged 2¢ per lb. and there were spurts of activity. Wool tops on the New York exchange were steady through most of the month at 84¢ for spots. This marks a rise from the recent past since the figure was 81¢ on Sept. 23 and 83¢ Sept 30.

Silk Fluctuates

Increased purchases by hosiery mills and a firmer tone in Japan brought a price advance in raw silk. Trading number on Commodity Exchange, New York, rose from $1.67 on Sept. 26 to $1.80 on Oct. 20, and fell to $1.75 by Nov. 1.

Ultra-Balmy Weather Slows up Knit Goods

Unseasonably high temperatures in the eastern states throughout October tended to slow up the improvement which has been shown in all three knit goods branches in recent months. Despite the handicap, however, hosiery and underwear sales were selling well with prices firm; outerwear mills complained weather had retarded heavyweight movement.

Rayon Continues Active

October demand for rayon yarn was about equal to September and slightly below August. Prices held strong, producers' stocks normal.

Spun Rayons Strong in Uncertain Market

Worries about the wage-hour law and the backward weather were blamed for the tendency among cutters and retailers to defer their silk and rayon fabric buying. While the market held up fairly well, volume was definitely below what had been hoped for. Spun rayons, as usual proved the exception; the wooly-type spun rayons sold spiritedly.

Wage-Hour Men at Work

Three sub-committees are in session and full committee expected to report in three months

From TEXTILE WORLD'S *Washington Office*

WHILE the Labor Standards Division makes daily headlines in its initial drive for nation-wide compliance with the 25c 44-hr. provisions of the wage-hour law, Industry Committee No. 1 is working just as energetically, but with less fanfare, toward recommendation of wage rates above minimum for the textile industry.

The main committee, which is headed by Donald Nelson of Sears, Roebuck, is not in session, but a heavy program of spade work is being carried on by three subcommittees. It is expected that the main committee can meet, absorb all the findings of these sub-groups, and make final wage recommendations to Administrator Elmer Andrews within about three months. Then, after public hearings, Andrews will issue the recommendation in the form of an executive order, or reject it and call for reconsideration by the same or a new committee.

The first of these three sub-committees, called "A" in Washington, was appointed to advise Mr. Andrews what percentage of wool can be used in cotton, rayon and silk yarn and woven goods without conferring competitive advantage upon the same, and to secure reasonably related minimum wages. R. R. West represents employers; Emil Rieve, employees; and George W. Taylor, the public.

The question of further processing beyond finished goods is to be considered by the second committee, designated "B". Under the head of further processing are listed: sheets, pillowcases, towels, diapers, gauze, bandages, mattresses, absorbent cotton, bedspreads, curtains, tablecloths, and draperies. Knitted underwear's request to be admitted to the textile group will require considerable attention. This committee met Nov. 1. A digest of findings later will be submitted to the main textile committee, which probably will hold open hearings for all interested parties. Members of Committee "B" are: Robert Chapman and John Nickerson for employers; Elizabeth Nord and Francis P. Fenton for labor; and P. Oliver Navis, chairman, and Louis Kirstein for the public.

Third of the sub-committees, designated "C" is on technical information. Its main job is to analyze the vast amount of facts and figures which the Bureau of Labor Statistics has assembled during recent years under guidance of Dr. Isador Lubin. It may also seek data at the Departments of Agriculture and Commerce. In addition, it is making a study of the wage structure of the cotton textile industry. The committee met Oct. 26 and 27, and is making recommendations to the main committee. Seabury Stanton and John R. Cheatham are representatives for employers; Sidney Hillman and Emil Rieve for employees; E. Leon Foshee and George W. Taylor, for the public.

Then, in addition to the three committee projects, there is another line out for information, which was somewhat confusingly called "unofficial information committees." Here's the straight of it. On Oct. 20, Mr. Nelson wrote a letter to 57 trade associations, representing 15 branches of the textile industry, asking them to submit their answers to two questions: (1) the probable effect of minimum wage rates of 30, 35, and 40c on the textile industry as defined; (2) what the trade association believed should be the relation of the wage in its branch to the minimum wage of the whole industry. It was suggested to the associations that they might wish to appoint committees of employers to submit the information, or to present it at Washington. That is how the term "information committees" got attached to this effort. The 15 branches are: (1) bleaching, printing and finishing of cotton goods (2) silk and rayon throwing (3) silk and rayon weaving (4) silk and rayon finishing (5) carded yarn weaving (6) combed yarn weaving (7) print cloth weaving (8) cotton waste (9) batting (10) narrow fabrics (11) velvet (12) cordage, twine, jute (13) lace manufacturing (14) spun silk (15) yarn manufacturing.

It is reported privately that members of the textile industry are not supplying requested information as promptly as desired. But wage-hour officials are little concerned as yet, for they realize that the industry is sitting up nights trying to figure out where it stands with the statutory provisions of the law, which went into effect Oct. 24.

There is no indication how many wage rates will be set for the industry, or what the average might be. Few believe the maximum will be put on now. But all understand that Mr. Andrews is determined to carry out the intent of Congress that a 40c wage be established everywhere as soon as possible.

Harris & Ewing

Portion of the Textile Committee with Administrator Andrews: (left to right) standing—R. R. West, J. R. Cheatham; seated—Donald Nelson, chairman, Elmer Andrews, Sidney Hillman

Wage-Hour Questions & Answers

An attempt to anticipate some of the doubts in manufacturers' minds

From TEXTILE WORLD'S *Washington Office*

WHAT must I do to comply with the Labor Standards Act? That question is really a multitude of questions. Employers everywhere, most of them far removed from Washington, are searching for answers. Business papers, newspapers, trade associations, and the Labor Standards Division, have clarified many of the points in doubt. TEXTILE WORLD'S correspondent in the capital, who is in constant touch with observers in strategic positions, and is acquainted with Administrator Elmer Andrews and most of his staff, herewith submits further information, some of which may add to employers' present knowledge. The question and answer form is followed for convenience. Answers to many vital questions must await decisions by the Supreme Court when the law is challenged. Most of these answers are definite and can be used as guidance. Others are best available opinion, for which, however, the publisher cannot be responsible.—*Editor*

Q: Should employers and employees appeal directly to Washington for advice and assistance, or to one of the 12 regional offices?

A: To one of the regional offices. But at present there are only four "area" offices: Boston, Chicago, Washington and San Francisco. The 12 regional offices will be set up later.

Q: What is the procedure of prosecution of violations?

A: (1) An employee or any citizen or a Labor Standards field man reports the violation. (2) Reports may go to the Federal district attorney or to Andrews' office in Washington. (3) If district attorney gets it direct, he can prosecute. (4) If report goes to Andrews' office he could order his attorneys to go to court. But first he probably would attempt to get an agreement with accused to settle any claims and then to comply.

Q: Do high-wage employees come under the hours provision of the law?

A: Yes. Mr. Andrews says it will be up to him to enforce this provision. He feels, however, that high-paid workers are satisfied with their hours privileges, and expects few complaints. But observers expect trouble on this point. One dissatisfied employee, or some unfriendly outsider, could report violation.

Q: Will Andrews tell an individual employer whether he is covered by the law or not?

A: No. The employer must read Andrews' interpretative bulletins and decide for himself.

Q: Will Andrews' office eventually issue a list of industries covered and not covered by the law?

A: No. The law applies, in the last analysis, to individual workers. In practice it applies to occupations, not to industries.

Q: Are workers in intra-State commerce definitely not covered?

A: They are definitely not covered. But employers should not depend on this remaining so, for three reasons: (1) The Administration is inclined to feel that local production affects inter-State commerce and Congress might some day put it under Federal law which might be upheld by the courts; (2) In some cases the Federal Government has already taken jurisdiction over intra-State enterprise; (3) The fall convention of State labor officials will discuss passage of more State laws to supplement the Federal wage-hour law.

Q: Do the titles of supervisory workers have any bearing on the determination of who is and is not covered?

A: No. It is what a worker *does* that counts, not what he is called. An executive is one who exercises judgment as to matters of policy, initiates action or change. A loom fixer does not have these powers and probably is not exempt. Research workers, instructors, may or may not have administrative powers; this kind of workers may have to be classified by wage-hour authority or by industrial committees. Company storekeepers might possibly be exempt because they are not working on goods for inter-State commerce.

Q: Can part of a manufacturer's employees be covered by the law while others are exempt?

A: Yes. The law applies to occupations engaged in inter-State commerce. If a company gets all its materials within its own State, and sells only part of its product into other States, only those employees working on the inter-State goods are covered.

Q: If a company obtains all or a substantial portion of its materials from other States, but sells all the product in its own State, does the law apply?

A: Yes, the "stream of commerce" theory clearly applies.

Q: Is a manufacturer responsible for violations committed by previous processors of materials or suppliers of parts?

A: Apparently if the manufacturer does not know of the violations he will not be subject to criminal prosecution, but he might be restrained by injunction from shipping finished product.

Q: Must an employee be specifically ordered to work overtime in order to collect his overtime pay?

A: Probably not; if the worker puts in overtime on the job without instructions to do so he can collect. Probably, also the worker would not be requested to report his overtime until the usual reporting time.

Q: Can the wage-hour law prevent an employer from reducing wages that are higher than the legal minimum?

A: No, it cannot. Section 18 merely stipulates that no provision of the law shall justify an employer in reducing present wages or lengthening hours of work. That is up to the union, says Andrews.

Q: Should an employer who decides he is not covered by the law keep records just the same?

A: By all means. If the courts should declare all or part of his workers are covered, it probably would order retroactive payment of difference in wages paid and legal wages, or time and a half for overtime, or both. Furthermore, any employer who decides not to comply should record that fact, with his reasons, with the Andrews office in Washington. Mr. Andrews has said that he would go to bat in court for any honestly mistaken employer. His testimony might help a lot.

(*Continued on page 111*)

Coordination of Textile Groups

Murchison sees correlation of cotton, rayon and silk associations inevitable

THE idea of closer coordination between the various textile associations received impetus from an important source when Dr. C. T. Murchison, president of the Cotton-Textile Institute, told his members at the annual meeting that correlation of the activities of the cotton, rayon and silk groups seems inevitable.

"The time will eventually come," he said, "when the members of the Cotton-Textile Institute, the National Rayon Weavers Association and the National Federation of Textiles will wish to consider some formal arrangement whereby proper correlation of the activities and policies of these three associations may be put on an enduring and officially recognized basis. I have in mind, of course, only that type of cooperative arrangement which would be applied to problems and issues which are clearly in common."

As a background for this statement, Dr. Murchison traced the growth of unifying forces operating within the cotton-textile industry specifically. "There is under way a definite welding process within the cotton-textile division of the industry," he pointed out, "and along with that a definite drawing together of the interests of cotton, rayon, and silk. The onward march of this development promises shortly to penetrate deeply into the domain of wool."

For one thing sectional differences are being eliminated, he stated. The industry is now a single industry and no section can "have an important advantage over another by means of local legislative sanction." There no longer exists, he believes, any power to utilize any of the public issues to sectional advantage. "It is possible that the last excuse for an embattled sectionalism will pass with the year 1938," he said.

Next, he pointed out, that this closing of ranks extends also to the rayon and silk divisions of the textile industry, due to the sharp increase in the number of cotton mills spinning and weaving rayon, and to the importance of rayon as the major fiber used by silk manufacturers. These two trends are effectually binding together these three major fibers into a field of common interest. Government recognition of this unity was made when Administrator Andrews decided to bring cotton, rayon and silk within the jurisdiction of Industry committee No. 1.

"It next becomes inevitable and essential that the central trade associations of these three groups closely correlate their activities in all matters having to do with Government regulatory policy," Dr. Murchison concluded.

Elmer Andrews Heard

The excellent impression made upon the textile industry by Elmer F. Andrews, administrator of the Fair Labor Standards Act, in his previous appearances at Birmingham, Gastonia and Boston, was strengthened when he was heard at the Cotton-Textile Institute meeting in New York. In fact this point was emphasized by Dr. Murchison, in his annual address, when he stated that apart from the wage-hour law, "the happiest circumstance to be noted at this time is the character and temperament of the man whom the President has designated to the post of administrator."

Mr. Andrews referred to the background of depression which featured the last annual meeting of the Institute and stated that it was due to a drying-up of consumer demand, which in turn resulted from lack of proper distribution of income. It is toward the correction of this situation that the wage-hour act is directed.

He recalled that Dr. Murchison, at that meeting, had asked that the textile industry be given a hand in the development of any such legislation—and Mr. Andrews pointed out that this has been done, as witness Committee No. 1. That committee, he said, is the pioneer, and will show the Labor Standards Division how an industrial committee should work, and what it should not do.

He then described in some detail the work of the textile committee so far, including particularly its problem of determining its jurisdiction.

On the subject of learners, Mr. Andrews stated that hearings would be held, industry by industry, and that the textile hearing would take place shortly.

During the question-and-answer period, a good many of the queries were too detailed to be answered positively at this time by the administrator. He did not try to duck, but merely pointed out in some cases that the absence of regulations on some points made a definite statement impossible.

Two-Price Plan Soft-Pedalled

The proposed two-price subsidy plan for liquidating the surplus of certain agricultural commodities, by distribution of low-cost goods to the needy, naturally came in for its share of attention during the discussion of activities of the Department of Agriculture in connection with cotton promotion and increased consumption of cotton. Two addresses—by Lawrence F. Myers, chief of the division of cotton marketing, and by Dr. James T. Jardine, director of research, both of the Department of Agriculture—covered this subject.

In his presidential address, Dr. Murchison referred to the two-price plan as follows:

"Government plans have not yet matured, but a tentative plan will be laid before you today by representatives of the Department of Agriculture who will be key men in the work to be done. Many of the press reports concerning the Department's policies have been misleading. As I see it, the program is not primarily one of relief nor does the Department have any idea of imposing upon the economic system a two-price arrangement."

However this assurance was not borne out by the representatives of the Department. Mr. Myers confirmed the fact that the two-price plan was under consideration by the Department but emphasized it was only one element, although possibly a big one.

In outlining the general program, he stressed the belief that the Division of Cotton Marketing was in agreement that whatever plans are worked out, must be worked out in cooperation with the industry. He argued that merely low price was insufficient to move a surplus.

Mr. Myers listed the recent new uses and the fields for expansion which his group is exploring. These include: cotton roads; cotton houses; duplex bags; cotton membranes in ditch building, airplane runways, for soil fixation; cotton for insulation; ply-wood in combination with fabric; cotton bale covering. He pointed out that the government had sparingly distributed cotton materials to people needing relief. The group just off

relief lacks funds to buy in any quantity and a special low price for this group might help move the surplus. He also thought that "thickening up" on fabrics for accepted uses would be helpful. He indicated that something *must* be done. "The situation is a challenge," he said. "Will you help us?"

Dr. Jardine told of the research facilities and program which is getting under way to help develop new and extended uses for agricultural products. Congress has appropriated $4,000,000 for four regional research laboratories directed at this problem. The laboratory in the South will have cotton as its No. 1 problem and virtually $1,000,000 annually to spend, with an extra $100,000 for survey to lead to location of the laboratory and coordination with existing research.

He summarized the work which Dept. of Agriculture bureaus had been doing to foster cotton uses for some years and listed the skeleton program for research by the Southern Regional Research Laboratory. This involves (1) evaluation of varietal and cultural differences in cotton, (2) investigation of the properties of the fiber with the object of producing better fibers and manufactured products. (3) investigation of processes of manufacture from ginning through to yarn and cloth, (4) checking on utilization of the material, through felting or otherwise, without employment of spinning and weaving, (5) investigation of fabric finishes, (6) investigation of chemical means for producing useful materials from cotton, and finally (7) surveying the possibilities of harvesting and utilizing the whole cotton plant. Dr. Jardine also hopes to make the regional laboratories clearing houses for information relative to what is being done in current research both in the United States and foreign countries as well.

Cotton Marketing Problems

Richard T. Harriss, of Harriss & Vose, members of New York Cotton Exchange, spoke in opposition to a plan to increase the number of staples and grades deliverable against the New York futures contract. He pointed out that there are now 45 separate qualities which the proposal would increase to 90, all of which could be delivered on one contract of 100 bales. The problem, he said, is the basic value of the futures contract, which through its decline has lately impaired its services to the trade as a hedge. The reduced price level gives to the public a false idea of cotton values since "basis on" which must be paid for actual cotton has risen considerably. Mr. Harriss argued that to restore value to futures contracts, their value to the buyer must be increased. This can be done, he believes, by reducing deliverable grades to nine, requiring that each 100-bale contract contain not more than three contiguous grades, and permitting delivery of 15/16, inch, and 1 1/16 at 75% of average quoted premiums but not allowing staple premiums on any contract containing more than two contiguous staples.

International News

Elmer F. Andrews, Wage-Hour Administrator talking it over with Dr. C. T. Murchison at the Cotton-Textile Institute's annual meeting

Dr. H. E. Michl, formerly of the Wharton School of Philadelphia, but now attached to the Institute staff as economist, gave a brief analysis of the peculiar position in which cotton has been placed. He pointed out that whereas there is actually a great surplus, most of it is tied up in government loans and is therefore off the market. Other cotton, due to the government loan policy, is being withheld from trade channels, so that in a time of burdensome surplus, there is actually a scarcity of cotton on the open market.

Fuller E. Callaway, Jr., expressed agreement with Mr. Harriss as to the means for enhancing the value of futures. He objected, however, to the use of N. Y. spot price as a basis of transactions in cotton waste because of its being an arbitrary price.

T. M. Marchant spoke briefly on the fact that the public does not recognize the current level of raw cotton prices. "With December at 8.25¢," he said, "we are paying basis on western cotton in South Carolina of 250 points, making actual price 10.75¢."

Election of Officers

The following men were elected to the Board of Directors of the Cotton-Textile Institute for a three-year period: Robert Amory, Howard Baetjer, Harry L. Bailey, Herman Cone, Amory Coolidge, Stuart W. Cramer, J. Holmes Davis, Norman Elsas, J. C. Evins, B. B. Gossett, Walter Hogg, George Lanier, John A. Law, K. P. Lewis, Paul K. McKenney, George V. Meehan, G. H. Milliken, Ralph C. Perkins, George A. Sloan, Fred W. Symmes, D. A. Turner, George R. Urquhart, George R. West, Jr., Robert R. West, and C. A. Rudisill. The following directors for a two-year period: Percy Howe, and Allen F. Johnson.

At the meeting of the Board of Directors following the annual meeting of the Institute, the following officers were elected: Goldthwaite H. Dorr, chairman of the board of directors; Claudius T. Murchison, president; John H. Cheatham, Georgia-Kincaid Mills, Griffin, Ga., vice-president; R. C. Dick, Pequot Mills, Salem, Mass., vice-president; Paul B. Halstead, secretary-treasurer.

The board also elected the following to the executive committee for three-year terms: W. N. Banks, Amory Coolidge, Percy Howe and Allen F. Johnson. These men will serve with Harry L. Bailey, R. E. Henry, K. P. Lewis, Frank I. Neild, A. G. Myers, H. G. Simonds, Robert R. West, and George M. Wright, whose terms of office continue. Also, on the executive committee are the officers of the Institute and the following presidents of associations: John H. Cheatham, Russell T. Fisher, R. W. Jennings, Fuller E. Callaway, and A. K. Winget.

Located in a mountain cove near Tryon, N. C., the new Adams-Millis hosiery mill resembles a school or other public building. Note use of glass brick in the first-floor windows and frosted glass in second story

A Community Project

Best describes new Adams-Millis full-fashioned hosiery plant at Tryon, N. C.

By WILLIAM G. ASHMORE
Southern Editor, TEXTILE WORLD

THE STORY of Adams-Millis Corp's. new full-fashioned hosiery mill at Tryon, N. C., started out to be a routine description of a new mill and its equipment. But after spending the better part of a day with J. E. Millis, president of the company, and his superintendent of full-fashioned knitting, G. C. Furr, the writer was impressed with the fact that there is much more to the story than a mere description of a very efficient manufacturing unit. The mill is designed to have a definite socializing effect on the community in which it is located —as well as to produce top-quality hosiery. There seems to be no doubt that the management's sincere enthusiasm in this plant is more than justified, and that the mill is destined to have a far-reaching effect upon this mountain community in years to come.

Mill and Employees

Upon approaching the mill, one first notes the architectural beauty and simplicity of the plant, which, even in a somewhat unfinished state, blends into the surrounding country with complete harmony. Located only a few yards from one of the main tourist highways in the North Carolina mountains, the mill is virtually invisible, because of the contour of the land and the trees which surround it. And upon looking closer, the average layman would be likely to mistake it for a school or public building, as there is none of the usual factory atmosphere about it. While not altogether foremost in the minds of the owners, there was a real desire to build a plant that would not clash with Tryon as a picturesque resort, or in any way annoy the winter residents who come there to get away from city life and industrialization. Typical of the thought which went into this phase of the planning is the fact that the conventional mill whistle has been replaced with an inside buzzer for announcing shift changes and the like. Also, it might be mentioned that, under the expert planting of Tommy Coster, landscape architect, who has laid out many of the beautiful grounds of resort homes in the section, the yard around the mill is beginning to resemble a college campus.

At the present time, 180 persons are employed by the mill, but the number will be gradually increased to 300 as the remainder of the machinery is installed. Selection of employees is being handled exclusively by Mr. Furr, who is interviewing each applicant individually in an effort to place each one in the type of job which suits him best. A few key operators were brought to the plant from High Point to train the new workers, none of whom have had any previous experience in industrial work of this sort. And already, local men and women are in complete charge of knitting machines—only four months at this writing after the first stone was laid for the new mill! Only residents of the county are being considered for work, as the management believes that its first duty is to the people who live in the vicinity. Workers are selected primarily for their intelligence, rather than by a yardstick of formal academic requirements, which means that every one in the community has an equal chance to get a job.

Live on Own Land

There are of course no village or organized community activities in connection with the mill. The majority of employees live on their own land within a radius of 15 miles of Tryon. Many of them are members of farm families, and all are delighted to have

a regular weekly wage to supplement meager incomes derived from farming the barren hills of North Carolina. In some instances young farmers are able to pay a hired man out of their earnings at the mill to operate the farm in their absence, which means that indirectly the mill is helping two persons instead of one. In other cases one or two members of a family work in the mill while others operate the farm. Working both in the mill and on the farm at the same time is discouraged by the management, which believes that eight hours a day is enough for any man to work.

Architectural Features

Having taken a peek at the effect the new mill is having and is expected to have on the people and the community, let us see what the plant itself looks like. The building is a departure from both the conventional-type building and the newer one-story windowless mills of recent years. It combines the best features of both. The inside dimensions of the plant proper are 113 x 148 ft. The mill is two stories in height and has 34,000 sq. ft. of floor space available, including space in smaller rooms built adjacent to the main manufacturing departments. Ceilings are 15 ft. on both floors, and wall construction is brick, steel, concrete, and glass brick.

The knitting department is located on the ground floor and is built entirely without windows, employing glass brick in their stead. This obviously is to facilitate air-conditioning and lighting where machinery and work are so delicate. Machinery here, primarily leggers and footers, is mounted on solid concrete foundations, which completely eliminate vibration common to wooden floors. Walking alleys are of conventionally treated sub-flooring with maple topping designed to protect the employees' feet from undue fatigue.

The throwing department, located on the second floor, offers a somewhat different appearance from the knitting room. Instead of glass-brick walls, there are wide steel-sashed windows with frosted glass. These windows, riveted shut, are used as a partial source of light, since the preparatory processes do not require the same degree of constancy and intensity that makes artificial lighting imperative in modern full-fashioned knitting. Flooring upstairs is the usual treated subflooring supported by steel beams and topped with maple.

Roof is Barrett tar-and-gravel, constructed with a slight pitch so that rain will run off. A modern freight elevator with full-automatic controls is in use between the two floors at the rear of the building. Steps in the front are used by employees for reaching the second floor, which, in addition to manufacturing, contains office space, lunch room, wash rooms, etc. The entire plant is protected by Grinnell sprinklers.

The soaking room is located adjacent to the throwing room on the same floor.

At the present time the throwing department contains new Fletcher skein winders and Sipp-Eastwood machines of a similar type. Twisting is done by means of Fletcher high-speed double-deck twisters. Each deck on the machines is driven by a 3-hp. G.E. motor. Westinghouse Deion starters are used. The yarn is put on cones by Foster cone winders and Universal winders. Located also in this room is a new Industrial Dryer Corp. H-W conditioner equipped with a Bristol recording instrument. Bobbins used in the conditioner, furnished by Clover Leaf Mfg. Co., are made with combination Bakelite and fiber heads to withstand steaming. Pin boards and cone racks were supplied by Johnson Engineering & Mfg. Co. Hooperwood canvas trucks are used to transport bobbins and silk about the room. Skein racks were made in the mill shop at High Point from electrically welded pipe and angle-iron, and are equipped with wheels so that they can be easily moved from place to place.

Knitting Department

Machinery which has been set up in the knitting department thus far includes nine new 26-section, 45-gage Reading leggers and three 30-section Reading footers. By Jan. 1, it is expected that ten more leggers and three more footers will be in operation. There are now in use 14 new Satco Steady Dial loopers which will be later increased to 28. A similar number of seamers is in use, and will be added to in the same ratio as the loopers. Both of these machines are

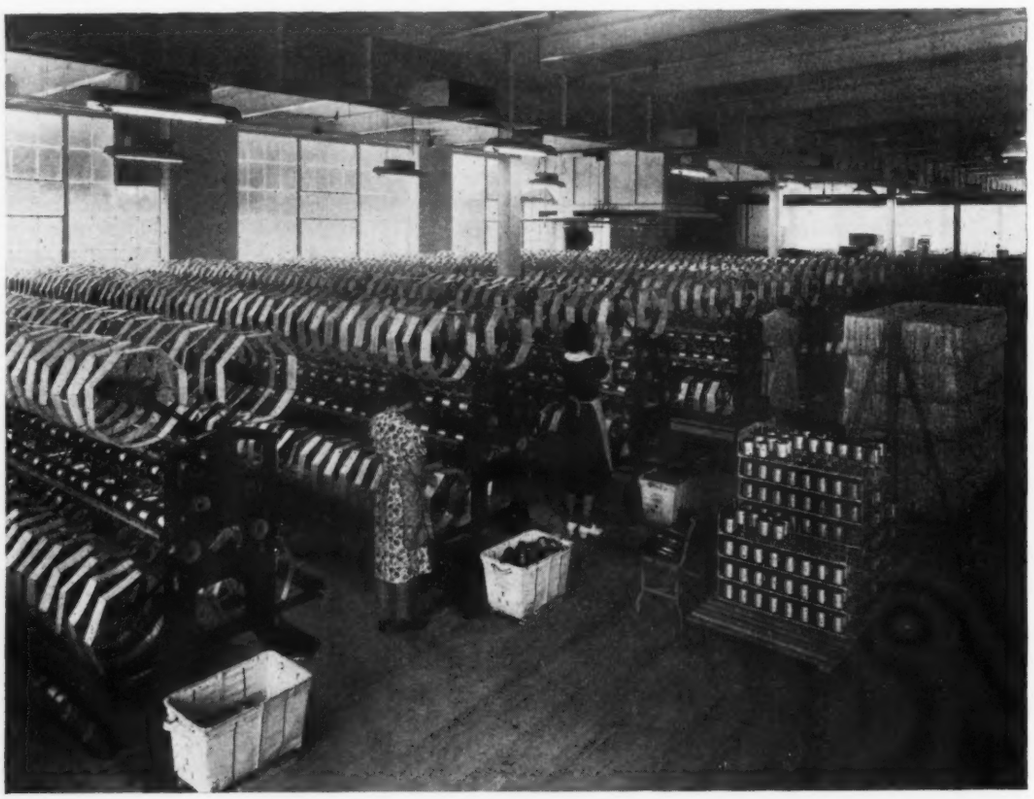
Knitting machines are mounted on concrete; walking alleys are of maple. Mercury-vapor lighting and central-station air conditioning are used here. Note architectural details of room

equipped with American Safety Table Co. tables, which insure employees utmost protection against accidents. Five Reading inspecting tables, with air-expanding Bakelite cylinders, are next in line of production. Eventually, these will be increased to twelve or fourteen.

Air Conditioning

Air conditioning and lighting are of paramount importance in any modern textile mill, and particularly in full-fashioned hosiery mills. The Adams-Millis plant has four separate air-conditioning units. The knitting department is equipped with a central-station Carrier unit designed to change the air completely every 9 min. It is designed to take care of both present capacity and any future expansion. Johnson automatic controls keep the relative humidity at 55 to 60% and the temperature at around 78°F. During the summer the room is 12 to 13°F. cooler than the outside air. In winter the temperature can be regulated as desired. One of the many reasons for selecting this equipment is that the moisture is kept in such a uniformly finely divided state that there is no possibility of its settling on the machines and causing rust.

A somewhat different arrangement of air-conditioning is in use in the throwing department. Here, three separate Air & Refrigeration Corp. units are located—two on the north side near the doublers and twisters, and one on the south side near the skein winders. The reason for this arrangement is that the internal loading per square foot is heavier near the heavy machinery. Each unit is totally inclosed, individually controlled, and equipped with an air filter, as well as washing and saturation devices. Another advantage of this installation is that lengthy ducts are eliminated, resulting in the use of less power for forcing the air over the room. The whole set-up is extremely flexible. Relative humidity in the room is maintained at around 50% and temperature at 78 to 80°F. Future extension of the plant will be cared for by adding individual units as necessary. The soaking room, office, lunch room, and other smaller rooms are heated by means of Modine unit heaters, which also circulate the air in summer.



The throwing department, located on the second floor, makes partial use of natural light through frosted glass windows. Three separate air-conditioning units are used here

Photos by W. B. Coze

Lighting

Especial attention was paid to lighting throughout the plant. The knitting department uses artificial light exclusively, supplied by a battery of Cooper Hewitt mercury-vapor lamps. Some light, of course, filters through the glass-brick walls, but it is believed that better knitting results from using artificial light of the same constancy and intensity at all times. Completely constant light is not quite so vital in the preparatory processes, therefore a certain amount of natural light is utilized through the large frosted-glass windows. This is supplemented by Cooper Hewitt combination mercury-vapor and incandescent lamps. Regular incandescent lamps are used in the other departments and in the office.

Electrical Equipment

Electrical equipment is largely Westinghouse and General Electric, although there is some miscellaneous equipment manufactured by other companies. The switch room, completely Westinghouse, is located off the knitting room on the ground floor and represents the latest developments in electric controls. Most of the heavier machinery is operated either by Westinghouse or by G.E. motors of varying capacities. The majority of starters are Westinghouse Deion type. Power is purchased, but there is a boiler room for supplying heat and process steam. Equipment includes a 150-hp. Cole boiler fired by a Westinghouse movable-grate automatic stoker. City water is used.

The rear wall of the building is of frame construction so that the plant can be extended if market conditions should ever warrant such a move. There is no finishing plant at Tryon, the hosiery being finished at High Point. Two-shift capacity production is expected to be 3,000 doz. pr. of stockings weekly.

Two-Price Subsidy Plan

What Wallace's proposal means, and what Washington thinks of it

From TEXTILE WORLD'S *Washington Office*

DEEPLY disappointed that a third of the nation is still in want while farm produce piles at declining prices, some determined Administration leaders propose to try new and drastic remedies. Senator Key Pitman of Nevada suggests swapping cotton for foreign silver. Senator Josh Lee of Oklahoma, and others, propose the domestic allotment plan of guaranteed prices at home and dumping hog-wild abroad. Some far-leftists in the Administration are dallying with direct price-fixing while the opposition cries "dictator." But outstanding among farm doctors who offer new and stronger medicine is Secretary Henry Wallace with his "two-price" proposal to be added to the present AAA set-up, which he is trying desperately to save.

Mr. Wallace's "two-price" plan provides that the under-privileged third—people on relief and those in low-income brackets—would get commodities at prices lower than market. The other two-thirds would get theirs at going market prices. Goods would be bought from producers and distributed through Government relief agencies, or through regular stores which would sell at low prices to eligibles holding cards, more probably through both.

"Elastic" commodities only are proposed for inclusion under the two-price plan. An *in*elastic commodity is one which a family always manages somehow to get no matter how poverty-stricken. Wheat is the best example of *in*elasticity. Practically everybody gets enough bread. Vegetables, dairy products, fresh meats, cotton goods are elastic. Mr. Wallace figures that 6,000,000 American families get about half enough of these, some get less.

Who Pays?

Who will pay for it? The upper two-thirds, of course. Some of the brain-trusty economists have figures to show that improved prices and stimulated trade will liquidate the cost. But critics say these economists are merely adding elastic "bulloney" to the list. If the program is put into operation, the "haves," they say, will foot the bill for exactly the amount of the discount to the "have nots," for better or for worse. Most of Mr. Wallace's spokesmen say this is a fact.

How will the "haves" pay? They will pay partly out of Federal funds for increased volume of goods to be given away free by the Surplus Commodities Corporation; partly in the form of increased prices to the upper two-thirds.

In case of cotton, neither Wallace nor Congress wants to subsidize the surplus at bargain prices to foreigners while so many American citizens can buy next to none for themselves. Then why not make a gift to the poor of the Government's 7,000,000 bales held as security on loans? That would be all right, but because processing is more than half the cost of finished goods, the Government must first get the cooperation of the cotton-textile industry.

So the Department of Agriculture talks of asking the industry to "cooperate," that is, produce at lower cost for sub-price sales. The industry's conferees at the capital answer that cost-cutting in the country's most competitive field is out of the question.

As for foregoing profits, they say that such profits as are earned now are sorely needed to recoup recent heavy losses. Then, says the Administration, let the industry make up its discount to the lower third in higher prices on its sales to the upper two-thirds. And, if that is not adequate, the Government will subsidize the cotton mills for the difference.

How About a Subsidy?

Subsidy would be fine, say some of the industry's representatives. Presumably Government purchases would be awards on bids. Bids would be high enough to include the subsidy. But *would* the bids be high enough? If hard times come, bidders—satisfied with more activity and hope of profit in the future—might make low offers and thus prevent any substantial flow of subsidy into the industry. If prosperity, they might not want to bid at all.

If the low-price production subsidy were put into action, it would provide two general outlets for surplus cotton. First, the Government would buy, for distribution and sale to the poor, a variety of cotton clothing, cotton mattresses, and bedding.

The second of these outlets would be allocation of perhaps 1,000,000 bales of government loan cotton to an insurance reserve for growers. With this as a nucleus, growers would begin paying premiums, say in 1940. In poor crop years they would receive indemnity in the form of cotton for sale for their accounts. A third outlet will be whatever AAA can develop through its new-use laboratory program.

Some Tough Questions

Obstacles to be hurdled are many. Who will draw that crooked line between the lower third and the upper two-thirds? Who will police the United States to prevent the upper two-thirds from snitching off the lower third's bargain counter? Will the manufacturers of other fabrics accuse Agriculture of discrimination? Or would other fabrics take advantage of higher prices to the upper two-thirds to displace a volume of cotton? Those are indeed hard questions.

Washington wonders if Mr. Wallace could move before Congress convenes in January. Some of his spokesmen say he could. He has $75,000,000 to play with, chicken-feed to be sure, but enough to start the ball rolling. And pump-priming money could possibly be made available to him. Much will depend on the result of private conferences now being held with interested individuals, and on open hearings later for larger groups. The most reliable opinion is that Roosevelt will ask Wallace to wait for Congress. Such a vast undertaking by the Executive authority, if it failed, might bring the whole New Deal down in ruins. Wallace can, of course, greatly expand distribution through the Surplus Commodities Corporation right away, and many think he will.

Then there is the question whether Congress will take such an irrevocable step when no one can see what far-reaching consequences might follow. Farm leaders are opposed or suspicious. The proposed two-price machine looks pretty good on paper but the vast complications probably will dismay even the New Deal. Meanwhile, every move of Mr. Wallace's two-price committee, which is headed by Assistant Secretary Harry Brown, will bear close watching. Congress undoubtedly will do *something* and parts of the two-price program may be included in its final action.

Plenty of Textile Movies

Publicity and education motivate their production

By LYNE S. METCALFE* and H. G. CHRISTENSEN*

THE textile and allied industries have been liberal users of motion picture and slidefilm screen for various purposes and objectives. Tendency has been toward education and information, but other objectives include advertising, sales promotion, sales training and institutional or public relations activities.

The textile industries provide interesting subjects for the movies. Now that pictures in natural colors are feasible and comparatively inexpensive, the old problem of showing textile products in natural colors is solved. Fabric textures, weaving and processing may be shown on the screen with magnifications of as much as 40,000 times. Animated technical drawings permit delineation of detail in loom operation and product research. Testing operations may be dramatized interestingly.

It is natural that the textile industries should turn to the movies as a medium for training salesmen and retail clerks. Pictures of this type have been produced by several blanket concerns, and for schooling car salesmen in automotive upholstery fabrics. A number of carpet pictures of the same type are in circulation, produced by manufacturers and shown to the retail floor covering trade.

The big problem in any commercial picture is circulation. This problem, however, has been greatly simplified, especially in connection with showings of semi-educational or informational industrial pictures. Over 45 colleges and universities now operate film circulating libraries to schools, clubs, churches and other groups in their regions or States.

The motion picture bureau of the Y.M.C.A. circulated over 500 reels of commercial pictures last year to audiences comprising 20,000,000 persons, both juveniles and adults, in clubs of many kinds, schools and other institutions. Then, there are a number of non-theatrical exchanges in operation which rent pictures to the same groups. All that is required of the picture's sponsor is a supply of prints or copies. Rarely is any charge made for bookings secured. It is true

(Top to Bottom): "Destiny of Dixie"—a weaver and helper at Avondale Mills. "How Kenwood Blanket Is Made"—Teasel gig raising nap of cloth. "Seven Wonders of Wool"—a fair demonstrator shows test for softness of wool. "Sam Farmer's Cotton"—unloading the cotton at a gin.

that this form of free circulation is somewhat slow in covering large numbers of people, but it is inexpensive and entirely reliable and effective.

There are also agencies which make a business of circulating commercials of the informational type to movie houses for which the sponsor pays so much a week per theater. In order to get on this type of circuit, the picture must have a minimum of advertising and a maximum of entertainment value.

The majority of textile productions now in circulation reveal step by step processes from raw materials on through the mills, to the finished fabric in actual use by consumers.

A partial check list of textile movies and slide films, omitting outdated or withdrawn items, follows:

"Destiny of Dixie", cotton manufacture, Avondale Mills, Birmingham, Ala.

"Sam Farmer's Cotton", cotton growth and distribution, U. S. Dept. of Agriculture, Office of Motion Pictures, Washington, D. C.

"Art of Spinning and Weaving", hand spinning and principles of weaving, Harvard Film Service, Cambridge, Mass.

"Cotton—Civilization's Fabric", from field to fabric, taken at B. B. & R. Knight mills, distributed by American Museum of Natural History, New York.

"Cotton Goods", manufacture and uses, Eastman Kodak Co., Rochester, N. Y.

"Linen Industry in U. S.", growth in Northwest, Dr. D. B. Hill, First National Bank Bldg., Salem, Ore.

"How the Kenwood Blanket Is Made", manufacture at mill of F. C. Huyck & Sons, Rensselaer, N. Y., Motion Picture Bureau, National Council of Y. M. C. A., 347 Madison Ave., New York, N. Y.

"Romance of Cloth", full course of manufacture, Wholesome Film Service, 48 Melrose St., Boston, Mass.

"From Cocoon to Kimona", silk industry in Japan, Wholesome Film Service.

"From Cocoon to Spool", silk industry, American Museum of Natural History.

"Cotton—From Seed to Cloth" growth and manufacture, Iowa State College, Ames, Ia.

"Seven Wonders of Wool", dramatization of wool's distinctive qualities, Associated Wool Industries, New York.

"Suitability Sells Suits", promoting idea of complete wardrobe for men, Associated Wool Industries.

"The Golden Fleece", handling and distributing raw wool, U. S. Dept. of Agriculture.

"Everybody Ski", ski clothing treated with "Aridex" water-repellant, E. I. du Pont de Nemours & Co., Wilmington, Del.

"Wool", from sheep to cloth, Edited Pictures System, 330 West 42nd St., New York.

"Woolen Goods", sources of wool and manufacture, Eastman Kodak Co.

"Wool marketing and manufacture", from fleece to fabric, U. S. Dept. of Agriculture.

"A Woolen Yarn", fleece to fabric, American Museum of Natural History.

"Cotton", Films of Commerce, 21 West 46th St., New York.

"Rayon Comes of Age", rayon manufacture and use, National Rayon Weavers Association, New York.

"Romance of Rayon", and "Quality Control Plan", rayon manufacture and merchandising, American Viscose Corp., New York.

"Rayon", manufacture, North American Rayon Corp., New York.

"Raw Silk Industry of Japan", silk growing, Raw Silk Intelligence Bureau of Japan, New York.

"Eight Billion Yards," cottons, Pepperell Mfg. Co., Boston, Mass.

"Fantasy in Fashion," cotton mills and style show, Clarence S. Brown Co., New York.

"Land of Cotton," growth and manufacture, General Electric Co., Schenectady, N. Y.

"Artcraft Silk Hosiery," cocoon to stocking, Artcraft Silk Hosiery Mills, N. Y.

"Story of Silk," cocoon to fabric, R. K. Laros Co., Bethlehem, Pa.

"Silks and Rayons," fabric analysis, Household Finance Corp., Chicago, Ill.

"The Story of Mohair," Goodall fabrics, L. C. Chase & Co., New York.

"Romance of Silk," cocoon to fabric, Belding Heminway Corticelli Co., N. Y.

"Making Cheney Silk," manufacture, Cheney Bros., South Manchester, Conn.

"Velvet—King of Fabrics," pile fabrics, Y. M. C. A. Motion Picture Bureau, N. Y.

"Ice Fashions," wool styles, Associated Wool Industries, New York.

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* Who jointly wrote, "How To Use Talking Pictures In Business", Harper & Bros., New York. Mr. Metcalfe is head of the story and script department, and Mr. Christensen is president and production manager, West Coast Sound Studios, Inc., New York.

Rayon Staple Emphasized

At fall meeting of A.S.M.E. and Committee D-13; weaving, shearing, spun glass also considered

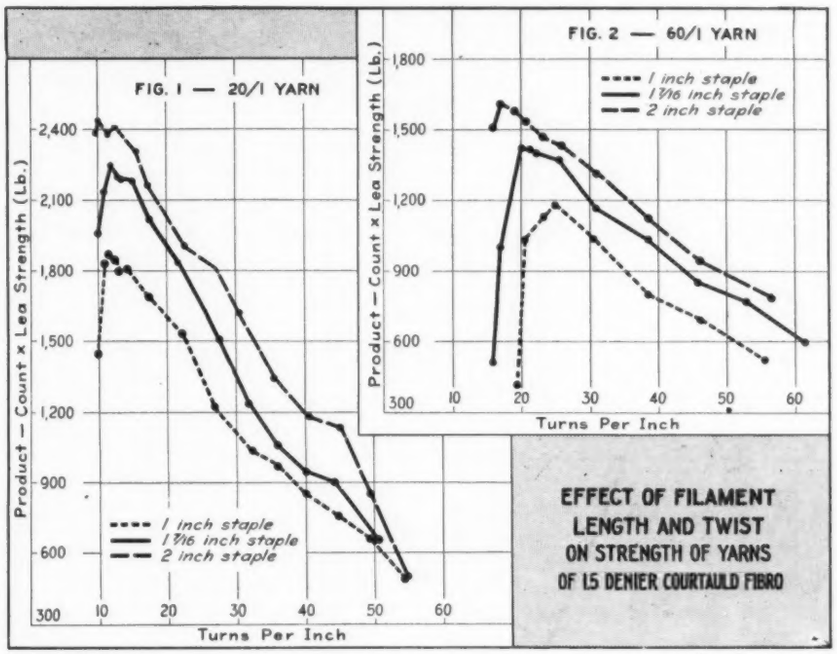
RECOGNIZING the intense interest among textile men in rayon staple, two of the technical associations of the textile industry in planning their fall meetings decided to place particular emphasis on this fiber. As a result, some phase of the manufacture or merchandising of rayon staple yarns and fabrics was considered in seven of the ten papers presented at meetings of the Textile Division of the American Society of Mechanical Engineers, held Oct. 6, in Providence, R. I., and of Committee D-13 of the American Society for Testing Materials, Oct. 20, in New York.

At the Committee D-13 symposium on spun rayon and blended fibers Dr. F. Bonnet, American Viscose Corp., spoke on "Rayon Staple Manufacture"; Dr. Harold DeWitt Smith, A. M. Tenney Associates, on "Test Methods"; W. H. Cady, United States Finishing Co., on "Processing of Spun Rayon and Spun Rayon Mixtures"; Alexis Sommaripa, E. I. du Pont de Nemours & Co., on "Fabrication, Merchandising, and Construction of Spun Rayon and Blended Fabrics"; and Stanley B. Hunt, Textile Economics Bureau, Inc., on "The Economic Significance of Rayon Staple Fiber." In addition, Baron Kohorn showed a moving picture of staple fiber production in Japan. At the A.S.M.E. meeting G. F. Bliss, Whitin Machine Works, spoke on "The Worsted System of Spinning, Including the Spinning of Rayon Fibers"; and F. J. Kennedy, Pacific Mills, on "Merchandising of Spun Rayon Fabrics."

E. B. Shand, Corning Glass Works discussed glass textiles at the D-13 meeting. At the A.S.M.E. meeting Albert Palmer, Crompton & Knowles Loom Works, spoke on "Loom Picking"; and Ralph L. Marble, Curtis & Marble Machine Co., spoke on "The Development of the Shearing of Textile Fabrics."

Spun Rayon Symposium

After describing briefly the manufacture of rayon staple, Dr. Bonnet stated that the longer the fibers, the stronger and more uniform will be the spun yarn. Tests made on 20/1 and 60/1 yarn processed and spun under identical conditions with merely a difference in fiber lengths are shown in Figs. 1 and 2. These charts also show that increasing the twist beyond a certain point does not further tend to increase the strength of the yarn.



(From Bonnet paper)

The strength of the yarn depends primarily upon the strength of the individual fibers and secondly upon expertness of the spinner to get uniform evenness in the spun yarn. Even under the most expert conditions a spun yarn never reaches, but only approaches, the strength of a continuous filament yarn of the same size.

Test Methods

Dr. Smith stated that in developing test methods for rayon staple fiber and spun yarn, we should draw not only on the recent work which has been done on these new fiber forms, but also on the store of technical and scientific experience with the natural spinnable fibers which has been accumulated over many years. A complete knowledge of all the characteristics of a fiber which affect in some degree its working properties and the properties of yarns and fabrics in which it is present would require testing for all of the characteristics listed in Table I. Table II lists the factors which appear to bear directly on spinning behavior. The significant characteristics of spun yarn are shown in Table III. Dr. Smith outlined the various methods which have been developed for determining fiber and yarn characteristics and suggested ways in which these might be adapted to the testing of rayon staple fibers and spun rayon yarns.

Economic Significance

Commenting on the economic significance of the rayon staple industry, Mr. Hunt pointed out that world production of this material has grown from 6,200,000 lb. in 1930 to an estimated total of 925,000,000 lb. in timated 925,000,000 lb. in 1938. U. S. wool goods industry in 1938 may use 5,000,000 lb. and cotton goods industry 50,000,000 lb.

Uses of rayon staple fiber as compared with rayon filament yarns, cotton, wool, and silk for the year 1937 are shown in Table V. The relatively high use of rayon staple fiber in the women's wear field is noteworthy. With continued development of newer and better staple fibers, the consumption of rayon staple may one day outstrip the consumption of rayon filament yarns.

Serviceability of Fabrics

Mr. Sommaripa made a strong plea for the establishment of generic terms for spun rayon fabrics instead of following the present practice of inventing innumerable brand names or borrowing terms applied to other types of fabric. As a start in this direction, he presented a chart of the "Classification of Spun Rayon Dress Fabrics,"

TABLE I. Fundamental Fiber Characteristics. *(From Smith paper)*

I. FORM	II. PHYSICAL	III. CHEMICAL
1. Length a. Mean length b. Length distribution (staple diagram) 2. Cross-Section a. Mean Area b. Area distribution c. Shape 3. Crimp a. Frequency (crimps per inch) b. Amplitude 4. Surface Character	1. Density (specific gravity) 2. Moisture Absorption a. Relation between relative humidity and moisture regain b. Swelling phenomena 3. Stress-strain Behavior a. Strength b. Elongation c. Elasticity d. Plasticity 4. Inter-fiber Friction 5. Color 6. Luster 7. Refractive Index 8. Scorching or Melting Point 9. Specific Heat 10. Specific Conductivity a. Heat b. Electricity	1. Composition 2. Structure 3. Behavior towards a. Acids b. Alkalis c. Oxidation d. Dyes e. Solvents

TABLE II. Fiber Properties Which Influence Spinning Quality. *(From Smith paper)*

1. Fineness
2. Length
3. Coefficient of inter-fiber friction
4. Stress-strain behavior

NOTE: The distribution of each of these properties is fully as important as their mean values in the effect on spinning quality. This is particularly true of length.

TABLE III. Significant Characteristics of Spun Yarns. *(From Smith paper)*

FORM	PHYSICAL	CHEMICAL
1. Fineness (count) 2. Twist 3. Cross-Section a. Diameter b. Compactness 4. Surface Character	1. Stress-Strain Behavior a. Strength b. Elongation c. Elasticity } Resilience d. Plasticity } 2. Evenness 3. Compressibility (Rigidity of cross-section shape)	1. Composition 2. Effect of a. Acids b. Alkalis c. Oxidation d. Dyes e. Lubricants f. Resins g. Other substances

in which a number of samples were classified according to the type of yarn, fiber composition, and weave.

He then outlined the result of an investigation to determine the experience of consumers as to the serviceability of garments made from spun rayon and blends. The investigation showed that on the whole, spun rayon fabrics are giving satisfactory performance. Questionnaires sent to retail piece goods buyers brought back 70 major comments on defects in spun rayon fabrics. The comments are classified in Table IV. These studies indicate that there is a great deal of research to be done to create fabrics which will not only answer the ever-growing consumer demand for new aesthetic properties, but which will also give the best performance in service.

Processing Spun Rayon

In discussing the processing of spun rayon, Mr. Cady stated that the first operation in the finishing plant usually is singeing. After this, all goods containing 10% or more of wool, and other spun rayon fabrics which tend to roll along the selvages or to crease badly, are usually crabbed at a higher temperature than that of any subsequent operation. The goods are then desized, using an enzyme treatment if the cloth contains starch.

If mercerizing is necessary, it is best to use caustic potash and to wash out the alkali as quickly as possible with hot water. Spun rayon fabrics containing no animal fibers are sometimes padded in the gray stage with dilute cold caustic soda and allowed to lie for a few minutes without tension.

The temperature of the boil-off bath varies from 140° when the fabric contains wool to nearly 210° in the case of all-rayon fabrics. Strong alkalis should be avoided in the boil-off bath. Fabrics which require bleaching are given a treatment on the jig or beck with sodium hypochlorite, or with hydrogen peroxide if the goods contain wool.

Rope dyeing usually is preferred if the construction of the cloth permits. If constructions which are difficult to penetrate must be handled in the open width, it is better first to pad the color on the dry cloth at 100° F., roll up the fabric on a batching roll, transfer the roll to a jig, and finish dyeing on the jig in a salt bath. All fabrics which are dyed in open width and some which are dyed in rope form must be vacuum extracted if creases are to be avoided. The lightest constructions can be handled in a rotary extractor. Light-weight fabrics are best run through a net or loop dryer followed by a short framing. Suitings and other heavy goods are usually dried on a long frame, but sometimes on cans.

Spun rayon fabrics, as a rule, require little in the way of finishing materials, unless synthetic resins are employed to produce anticrease or other special finishes. If a smooth effect is desired, it is customary to decatize the goods after dyeing. Passage through a silk calender will increase the softness of most spun rayon fabrics, but this operation should be avoided on nub cloths and fancy weaves or any fabric where maximum fullness is desired.

Worsted System Spinning

Mr. Bliss, the first speaker at the A.S.M.E. meeting, traced the steps necessary for making worsted tops, and worsted yarns on the Bradford and French systems, discussed the manufacture of rayon staple and wool blends on the worsted system, and then described recent improvements in worsted yarn machinery. In the manufacture of rayon and wool blends, the wool should be handled in the regular way and combined with the rayon at the finisher gill following the combing operation. The rayon is carded and gilled only, without passing through the comb, as any extra operations tend to break down the staple and cause excessive static.

In spinning a blend, the usual operations can be somewhat condensed, as it is possible to increase the draft of a rayon blend in direct proportion to the amount of rayon used. This longer draft will reduce the number of operations to five in the Bradford system, and seven in the French system. The size of rayon commonly used is approximately 5 den., as this matches up very closely with 56s worsted top. Since a rayon and wool blend spins much better than a worsted top, it can be spun at a higher spindle speed, in some cases as high as 9,000 r.p.m. When a large percentage of rayon is used, it is sometimes necessary to cover the rolls with paper to reduce static.

A recent improvement in worsted yarn machinery is a high-speed cone rover which winds the roving on an 8x4½-in. bobbin at a flyer speed of 2,200 r.p.m. as compared to the usual speed of 1,260 r.p.m. On the open system the main improvements have been the application of rings allowing approximately 50% more speed, and increasing the size of the reducer package from 9x5 to 10x5 and the rover package from 6x3½ to 8x4.

In twisters, application of large automatic rings allows the twisting of packages holding up to 28 oz. net weight. Where large lots are used, these packages are placed in a spooler creel, with the top of one package tied to the bottom of the next, giving the equivalent of a 56 oz. package of yarn.

The Whitin BW ring spinning

TABLE IV. Causes for complaints regarding serviceability of spun-rayon fabrics. *(From Sommaripa paper)*

Type of fabric	*Fading—washing sunlight*	*Tear or holes in wear*	*Shrink or Stretch*	*Pulling out at seams*	*Fuzzing up*	*Odor*	*Totals*
Slub yarns in warp and filling	11	9	11	3	4	1	39
Part wool	3	3	6	1	6	....	19
Challis	.....	1	1	.....	1	....	3
Miscellaneous	3	3	3	.....	.....	....	9
Totals	17	16	21	4	11	1	70

TABLE V. Type-uses expressed in per cent of rayon staple as compared with filament rayon, cotton, wool, and silk, for the year 1937. *(From Hunt paper)*

Use	*Rayon Staple*	*Filament Rayon*	*Cotton*	*Wool*	*Silk*
Women's Wear	73	76	22	20	92
Men's Wear	15	15	18	40	6
Household Uses	4	7	18	32	1
Industrial Uses	8	2	42	8	1
Total Use	100%	100%	100%	100%	100%

frame, which Mr. Bliss discussed in detail, was described in the July, 1938 issue of TEXTILE WORLD.

Merchandising Spun Rayon Fabrics

In his address, Dr. Kennedy pointed out that at the present time by far the largest proportion of spun rayon is going into women's outerwear. Based upon square yards of woven fabric consumed, fiber consumption in women's outerwear fabrics is approximately in the proportion shown in Table VI. For children's outerwear spun rayon fabrics so far have not demonstrated the same strength for a given construction and weight as is possessed by cotton fabrics.

Except for the use of spun rayon in the knit underwear trade for the production of so-called "woolies," there seems to be little promise for spun rayon in women's underwear.

It appears that spun rayon has an opportunity to do a job in the men's wear field. Eventually there may be all-rayon suiting fabrics. In shirts, pajamas, and woven-fabric underwear there is a total market of around 550,000,000 yd., comprised at present almost exclusively of cotton. Spun rayon in some kind of a blend with cotton may possibly have a chance here if it can be given the required sturdiness to hard wear and repeated launderings. It is in sports wear—shirts, slacks, jackets, etc.—where spun rayon has the greatest opportunity in the men's field.

What the opportunities for spun rayon are in the household and industrial fabric field are uncertain, but so far they seem rather limited. It is a distinct possibility that ten years from now the apparel fields will be largely dominated by the synthetic fibers, while industrial and household uses will constitute the principal markets for cotton.

Loom Picking Mechanisms

In the first part of his paper, delivered at the A.S.M.E. meeting, Mr. Palmer outlined the early history of loom picking and reviewed British and United States patents covering various types of picking motions. He pointed out that while some of these inventions have failed and others have proved desirable for special purposes, none has been found worthy of replacing the conventional cam-operated mechanism used on present-day looms.

In the second part of his paper, Mr. Palmer discussed studies which have been made to determine the correct shape of pick cams. These studies showed also that the maximum initial velocity of the shuttle on ordinary looms; i.e., the velocity as it leaves the picker, is about 42 ft. per sec. Analysis by slow-motion pictures revealed that 40% of this velocity is furnished by the resilience of the picker stick, so that the pick cam must be designed to furnish a velocity of only 25 ft. for maximum velocity.

Modern picking cams are made with the aid of mathematical curves; yet even with mathematical processes, it is not unusual to produce cams which are totally unalike. To obtain best results, the cam should be proportioned so that the maximum velocity contribution of the cam will coincide in point of view of time with the maximum velocity contribution of the picker stick. Where these two points do not coincide, the cam must be made more powerful to compensate for the unused velocity contribution of the stick, which would result in a hard-running loom.

It is possible, by reducing the retarding forces, to reduce the maximum initial velocity of the shuttle and, in turn, the forces in the picking mechanism. Also, another possibility for decreasing the initial shuttle velocity is the provision of more time for the passage of the shuttle from one side of the loom to the other. The time element with respect to the process of bringing the shuttle from rest up to speed also is important. The longer the time during which this process takes place, the lower is the acceleration and the lower are the forces that are involved.

Shearing

Mr. Marble, speaking at the A.S.M.E. meeting, traced the history of shearing or cropping of textile fabrics from the early, crude, hand method to the present highly efficient machine processes. In 1792 a United States patent was granted for a cloth shearing machine which contained the embryo idea of a rotary cutter and stationary blade which is used today. The first power machines were crude, slow running affairs.

TABLE VI. Fiber consumption in women's outerwear fabrics at present based on square yards of woven fabrics consumed. *(From Kennedy paper)*

Cotton	50%
Filament rayon	30%
Wool	12%
Silk	3%
Spun rayon	5%
Linen	*
Total	100%

* Less than 1%.

The woolen and worsted shear of today accomplishes in one run at cloth speeds of 20 to 40 yd. a min. what it took the original shear several runs to do. The original cotton shear, combined both cleaning and shearing in one unit. With the introduction of the automatic loom, every time a bobbin is changed, a thread is left hanging from the selvage. The present day automatic cotton shear was developed to meet this condition, so that now the loom rolls are sewn together, the cloth fed into a scray, through a brushing machine, and then through a four-cutter shear to a rolling machine. This is done at speeds of 80 to 120 yd. per min. The shear requires no attention from the operator, as the blades and cloth are protected from damage by an automatic device which detects seams or foreign substances in the cloth. Each revolver has its own motor, insuring a steady speed.

Glass Textiles

Speaking before Committee D-13 on the subject of glass textiles, Mr. Shand described the methods employed in manufacturing glass yarns, discussed the properties of glass fibers, and listed the various types of woven knitted and braided fabrics which have been produced from glass yarns. Mr. Shand stated that glass textiles must be classified as specialty products, with their applications limited at this time almost entirely to the industrial field. It is anticipated that in the future as finer and softer yarns are developed and as colored yarns become commercially available, glass fibers will find application in the manufacture of household textiles.

Surface-Active Chemicals

Operation	Time Element in Wetting-Out	Removal of Impurities	Additions to Fiber
Scouring Wool Goods (After Fulling)	After the desired degree of felting has been obtained, it is necessary to scour the fabric and remove the spent soap completely. The faster this can be done, the greater will be the wet finishing room production. Goods coming from the fulling mill are moist; therefore wetting-out speed is not particularly essential.	Impurities to be removed in scouring after fulling are the fulling soap, dirt, flock, loose color, and emulsified stock lubricants.	Nothing added to the fabric in this operation.
Scouring Wool Goods (Not Fulled)	It is necessary that the goods be wet out as rapidly as possible, especially where there is a tight weave, such as a herringbone, gabardine, or twill. This prevents the goods from cracking.	Impurities removed during scouring include wool oils, and dirt, chalk marks, grease, and oil stains acquired in the several manufacturing operations.	Nothing is added to the fabric.
Dyeing Cotton Raw Stock	In one method of dyeing raw cotton the cotton circulates through the dye liquor; in the other, the liquor circulates through the cotton. It is common practice to charge the machine with the cotton and wet it down with water to assist in packing; this is done cold, after which steam is turned on. By the time the temperature is up to 150 to 180° F., the cotton should be thoroughly and uniformly wet out and ready for the dye solution.	The ideal surface-active chemical used in dyeing raw cotton is one that renders the cotton receptive to the dye and at the same time does not remove much of the natural wax. On the other hand, surface-active chemicals used in dyeing various types of waste, such as roving and spinning waste, which is contaminated with lubricating and spindle oils, should—in addition to its wetting-out properties—have sufficient detergent or emulsifying power to remove the oil to such a degree that there will be no fire hazard during the subsequent drying operation.	Additions made to the fibers include the dye, as well as softeners used in some cases to improve the spinning properties of the cotton.
Knitting Full-Fashioned Hosiery	The usual speed of a full-fashioned machine is about 60 courses per min. The yarn in a course is nearly 1 yd. in length. Thus in a three-carrier machine 1 yd. of silk is drawn through the trough at the rate of 60 yd. per min. every 3 min. The silk must wet out in the time it is drawn through the machine and, at the same time, it must not dry out before it can be knit.	Nothing must be stripped from the silk in this operation; felt pads must not be made slimy; protective coatings must not be striped from the metal pans.	Sufficient water to make the silk knit properly and provide the proper feel to the hosiery is added.
Soaking Rayon Crepe	The time of soaking depends on the type of equipment, being about 20 min. with still-bath tubs, and 6 min. with machines. In this time the rayon should take up, uniformly and evenly, the tint and the soaking materials:	Nothing should be removed from the rayon in this operation, unless it be a part of the softening oils used by the rayon producer.	The rayon takes on the fugitive tints used for identification purposes. It also takes up ingredients of the soaking bath. Choice of surface-active chemicals is limited to those which will assist in the uniform exhaustion of the binder and the oil.

Data on Specific Applications (continued)

By GEORGE A. THOMAS

Alteration of Physical State	Alteration of Chemical State	Operating Conditions
During scouring the wool acquires a soft and lofty handle, and the matted feel and appearance due to the presence of fulling soap in the goods are eliminated.	There is no apparent chemical change in the wool, unless it be the elimination of any alkali taken up by the wool from the fulling solution.	An alkaline fulling solution may be in the neighborhood of pH 10. A surface-active chemical which is effective without the addition of more alkali to the scouring bath is advantageous, as it reduces the danger of harsh goods due to excessive alkali. The lower the temperature at which the agent is effective, the more economical will be the operation. Use of a surface-active chemical does not change the bath ratio from that of the usual scour after fulling. The assistant must be highly resistant to lime or produce soluble types of lime soaps and salts. A good suds is desirable in scouring. The surface-active chemical must be compatible with soap.
There should be no swelling of the fibers and no matting of the nap of the goods. The goods become somewhat narrower and tighter. No color or dye should be loosened or allowed to bleed or run.	There is no chemical change in the fibers or the fabric.	A surface-active chemical which has good detergent properties at a low concentration in a neutral or slightly alkaline bath is highly desirable. The temperature should not be in excess of 120° F. The bath ratio in a piece goods washer is about 10 to 1 while the goods are running, but several changes of water are used in the rinsing. The surface-active chemical should have good rinsibility and should leave the goods with a soft handle and free from odor. If one of the newer surface-active chemicals is used in conjunction with soap and soda, it must be compatible with those materials.
The color of the cotton is changed; but other physical properties, such as fiber length, strength, luster, and spinning qualities, should not be impaired.	Alterations in the chemical structure of the cotton should be avoided as far as possible. Some types of surface-active chemicals are said to possess the property of preventing the formation of oxycellulose and hydrocellulose; this property, of course, is a desirable one.	Vat colors, sulphur colors, and some direct cotton colors are applied in an alkaline bath. In other cases, the bath is neutral. Thus, in some cases the surface-active chemical selected should be one having its optimum effect in alkaline baths; in other cases, one which is most efficient in neutral solutions. Bath ratios for raw-stock dyeing may vary from 12 to 1 up to 50 to 1. In most cases the agent used must be capable of wetting out in cold or lukewarm solutions. However, after the cotton is uniformly wet out the surface-active chemical is no longer needed. Therefore a surface-active chemical can be used which contains solvents that volatilize at the higher temperatures employed in dyeing. If the agent used is broken down or some of its components are driven off, the product should not curd, precipitate, or form any substance that will impede spinning or make an undue amount of fly or waste.
The silk is moistened. If the silk is too wet, the hose will curl unduly and the stitch will become sleazy; also the silk may mildew. Unevenness in the degree of wetness will cause irregular leg length. The gum is softened and remains plastic while the silk is being knit. After knitting, the silk must have a soft, supple handle.	The chemical nature of the silk must not be altered while it is being wet out on the knitting machine. The surface-active chemical must enhance, rather than retard, the subsequent boil-off operation.	Selection of surface-active chemicals for use in the troughs of full-fashioned hosiery machines are limited to those agents which are neutral or do not change the pH value of the silk as obtained in soaking. They should not cause the metal parts of the machine to rust or corrode. Knitting is done without heat; therefore the surface-active chemical must function at room temperature.
After soaking, extracting and drying, the rayon takes on a new feel or handle. The extent of the change in handle depends on the ratio of the binder to the oil used in the preparation of the bath. In all cases the filaments are bound together more tightly.	There is no change in the chemical structure of the rayon. The surface-active chemicals used as assistants in soaking should aid in the removal of the soaking agents and other foreign materials in the subsequent scouring operation.	The pH value of the soaking bath usually ranges from 6.5 to 8.5. For tub soaking the bath ratio is 60 gal. of solution to 110 lb. of yarn; in most machines 30 lb. of yarn is soaked at a time, while the volume of solution varies from 30 to 60 gal. The temperature ranges from 120 to 130° F. An important function of the surface-active chemical is to solubilize the vegetable or animal oils used in the soaking compound, thereby reducing the amount of sulphonated oil necessary for use as an emulsifying agent.

Georgia Operating Executives

Discuss slashing, weaving, and cloth-room problems

OVER 300 Georgia and Alabama operating executives attended the fall meeting of the Textile Operating Executives of Georgia, held Oct. 8, at Georgia School of Technology, Atlanta. In the absence of A. D. Elliott, superintendent of the cotton mill division of Trion (Ga.) Co., general chairman of the group, the meeting was presided over by Allen Jones, superintendent of Muscogee Mfg. Co., Columbus, Ga., vice-chairman. The weaving discussion was led by W. H. Gibson, Jr., superintendent of Martha Mills, Thomaston, Ga. Harry Purvis, superintendent of Chicopee Mfg. Corp. of Ga., Gainesville, led the slashing session.

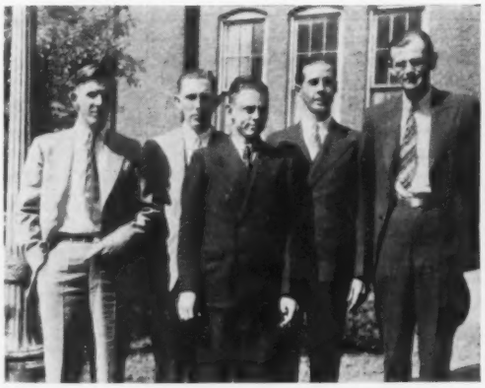
T. M. Forbes, secretary of the Cotton Manufacturers Association of Georgia, introduced J. V. Carmichael, of the Georgia State Legislature, who urged the mill men to take a more active interest in their employees and in the community in order to prevent development of conditions in the United States such as are prevalent in totalitarian countries. Highlights of the technical session included detailed discussions of cloth room procedure, weaving problems, the new "energy drive", and slashing.

Yardage in the cloth room is determined a number of different ways, according to R. P. Sweeny, superintendent of Exposition Cotton Mills. In some instances, the folder hands count the yardage and use a yard-stick to measure the length of the folds. The weight of the bale gives an indication of the yardage. Cloth should be measured at the end, in the middle, and at the beginning in order to reach a fair average. The weight of the goods should be taken into consideration, as some fabrics drag over measuring rolls more than others. Mechanical counters are employed when possible. Mr. Holden uses a steel tape to check against yardage counters. J. C. Platt, agent, Chicopee Mfg. Corp. of Ga., pointed out that over a period of time goods in a warehouse tend to shrink, and that lengths shorten on a folding machine as the cloth piles up.

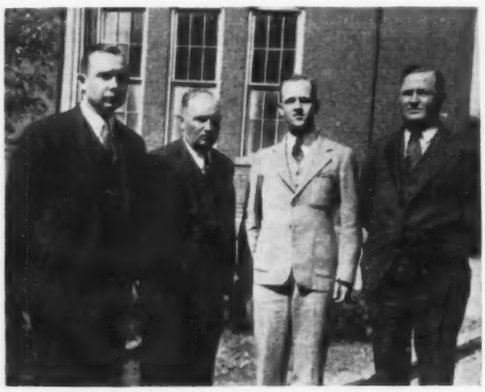
Consensus was that seconds should be reported immediately to the weave room, and that an attempt should be made to run down the cause of the trouble at once.

A large number of operating executives reported that they have experienced trouble due to quills turning over in the battery. Several causes and remedies were given for this situation, one suggestion being made by Mr. Moffitt, of Opelika (Ala.) Mills. He recommended putting on the quill a brass tip with a square side designed to fit in a square clip. He has been using such a device for two years with excellent results. In a test run on 52 looms over a period of 14 weeks, breakage dropped from an average of 441 in 4 hr. to 210 during the same period. Production increased from 89.7 to 91.9%. Filling used was 12s and 14s, but the device is satisfactory with finer numbers.

Several members reported successful operation of the energy or weighted-flywheel drive for looms. W. L. Brown, superintendent of Opelika Mills, tested the energy drive with weights ranging from 50 to 125 lb. and finally settled on 90 lb. as being best for his work. Speed of 260



LEFT: E. B. Boggs, R. E. Sosebee, H. C. Burke, H. R. Cuswell, J. A. Lanier, all of Callaway Mills, Manchester, Ga. RIGHT: R. E. Howell, plant manager, D. A. Barnes, chemist, Frank G. North, Inc., Atlanta, Ga.



LEFT: J. LaMar Moore, superintendent, G. W. Whellis, J. P. Cleveland, and A. E. Hood, all of Callaway Mills, Manchester, Ga. RIGHT: R. P. Sweeny, superintendent, Exposition Cotton Mills, and Dial Sweeny, Mitchell & Smith, Inc., father and son

Allen Jones, superintendent, Muscogee Mfg. Co., Columbus, Ga., elected general chairman to succeed A. D. Elliott.

LEFT: W. A. Nelson, Buck Creek Cotton Mills, Siluria, Ala.; A. D. Carter, Carter Traveler Co., Gastonia, N. C.; W. O. Ruffin, Buck Creek Cotton Mills; W. R. Parker, superintendent, Strickland Cotton Mills, Valdosta, Ga.; W. S. Hunt, Carter Traveler Co. RIGHT: R. T. Smith, Arnall Cotton Mills, Sargent, Ga.; D. T. Smith, Martha Mills, Thomaston.

40-in. E-Model looms (1900) has increased from 152 to 176 picks per minute. Power-consumption increase amounts to 11%. After getting a technical difficulty (changing pitman arms from wood to metal) straightened out, the looms operated perfectly and so far have shown no increase in seconds or supply cost, and the work load has not been reduced. Another instance of the successful use of the energy drive principle was cited by D. D. Towers, general manager of Anchor Duck Mills, Rome, Ga. He said that long before the commercial drive was on the market, his mill was operating loom pulleys utilizing 85 lb. of lead. The drives were built from pieces of metal out of the scrap pile. After the heavy flywheels were applied and with no further adjustment, speed automatically picked up four to five picks a minute. The looms are much steadier. Eventually, 30-hp. motors were replaced by 15-hp. motors with good results. In this particular instance, it should be pointed out, both looms and cloth are very heavy. In contrast to these reports, one member stated that he tested the energy drive on two looms from March 26, 1938, to Sept. 17, 1938, with the following results: Efficiency 89.2% with energy drive; 95.65% without energy drive. Speed, 182 picks per min. producing 12,436 yd. of cloth in 1,920 working hours; with energy drive; 160 picks per min. producing 11,569 yd. of cloth in 1,920 working hours without energy drive. Cost of supplies, $2.93 for two looms with energy drive; $1.66 for two looms without energy drive in same period.

Consensus was that slasher speed can be successfully increased from 40 to 45% by the addition of another cylinder, without affecting the moisture and size in the yarn.

It was reported that beams can be prevented from stealing ends on a double-head slasher by separating them with a revolving rod at the creel.

Reverse- and regular-twist yarn are best handled at the slasher by using two size boxes, with the reverse-twist yarn hitting the cylinder an inch or two ahead of the regular twist.

Allen Jones was elected general chairman to succeed Mr. Elliott whose term expired with this meeting. J. C. Platt, of Chicopee, was named vice-chairman.

Push New Fiber Plans

THE RAPID progress being made in the field of chemically derived textile yarns was illustrated in two developments during recent weeks: (1) formal announcement by E. I. du Pont de Nemours & Co., of plans for commercial production of the much-discussed Fiber 66, now named Nylon textile fiber, with information on the fiber's characteristics, prospective uses, etc.; and (2) announcement by the Celanese Corp. of America, confirming previous reports, that plans had been completed for erection near Pearisburg, Va., of a $10,000,000 plant where, it was disclosed for the first time, the company would make an entirely new textile yarn that would be available for a wide range of textile uses. Celanese Corp. refused to give any information as to the nature of the new yarn.

The picture with regard to Du Pont's new Nylon yarn clarified materially during the month, both through an official statement of the company, and through reports that reached the market indirectly. The company statement asserts that the new material has hundreds of potential uses, textile and non-textile, and will be "of revolutionary importance in fine hosiery." Perfection of the material follows a decade of research. The new material from which Fiber 66 is derived is called Nylon, a coined name, and the generic term for materials defined as synthetic fiber-forming polymeric amides having a protein-like chemical structure; derivable from coal, air and water, or other substances; and characterized by extreme toughness and strength and the peculiar ability to be formed into fibers and into various shapes, such as bristles and sheets. (See TEXTILE WORLD, October, 1938, page 55.)

"Nylon," it is pointed out, differs radically in its physical and chemical properties from all other synthetic fibers. "Filaments of extreme fineness can be spun," the Du Pont statement adds, "much finer than the filaments of silk and rayon; Nylon takes dyes used for silk, wool, acetate, and certain of the direct dyes used for cotton and rayon."

Plans for production, distribution, etc.: The Nylon business will be handled by the Nylon Division, Rayon Department of Du Pont. E. K. Gladding, is manager of the Nylon Division. Indications are that Nylon will be on the market in commercial quantities in about 18 months. The plant which will cost from $8,000,000 to $10,000,000 will be located one mile southwest of Seaford, Del., a town of 2,500 population on the north side of Nanticoke river, on 340 acre site; construction to start early in December.

Prospective markets: While textile interest in Nylon at present focusses mainly on its application to hosiery, the picture is a good deal wider than that might imply. Sewing thread, made of Nylon is already on the market; Other fields where, experiment has indicated, the new fiber may be used successfully, include: knitted fabrics, particularly tricot and milanese, and gloves; as a back for rayon pile velvets; woven dress goods and parachutes. Nylon also can be used as a textile finishing agent, etc. Industrial uses for the yarn are expected to include wire coverings. It is stated that Nylon is almost insensitive to moisture.

Nylon in hosiery: Hosiery made of Nylon yarn is understood to possess extreme sheerness, high elasticity, high strength, and improved run-resistance.

Close secrecy, is maintained as to probable price of the new hosiery yarn. Those who claim to know say they understand the fiber will sell at a price permitting the retailing of the hosiery at $1 per pair.

Paterson's New Hope . . .

Can labor harmony halt city's decline as textile center?

Can Paterson, N. J., one-time "silk capital" of the country, succeed in arresting the steady loss of business which has marked its decline as a textile center during recent years? That question is being asked with some interest in the New York market this fall. It is prompted by recent developments in the Paterson area which indicate that textile firms, union leaders and the city authorities there are making a successful effort to work together after a generation of discord. Two developments are outstanding: (a) the new harmony between manufacturers and labor in the silk-rayon weaving industry, which some believe has opened the door to modernization and partial restoration of the industry; and (b) the formation by dyers and printers of a new employers' association to be devoted exclusively to labor relations, which it is hoped will help to revive the local dyeing and printing industry.

WEAVERS ARE HOPEFUL

CAN the exodus of silk-rayon weavers be halted? Recognizing that today Paterson is only a shadow of its old self in that field, textile leaders are inclined to pull their punches when it comes to prophecies. However, it is undeniable that the quick settlement of the one-week strike in September, and the broader powers given manufacturers in the current contract, has created a new feeling of optimism in the industry. The strike involved two groups of manufacturers represented respectively by the Silk and Rayon Manufacturers Association, which included the larger firms, and the Silk Commission Manufacturers Association, comprising the smaller houses. Settlement terms were substantially the same in both cases. The most significant result was that the new contract imposed no limit on the number of looms operated per weaver, thus permitting wider use of automatic looms. This is viewed by the manufacturers as a definite step forward, since lack of modern equipment has long been one of the chief obstacles to profits and high wages in Paterson.

The manufacturers also are encouraged by another aspect of the situation. The contract of the Silk and Rayon Manufacturers Association has provisions—not included in the Commission Manufacturers contract—which are designed to prevent soldiering on the job by the less steady type of worker. Inclusion of this provision shows a sympathetic attitude on the part of the union which is regarded as helpful and valuable.

The present textile position of Paterson may be summarized as follows: Virtually the entire output of the silk-rayon weavers is lingerie fabrics, and 75% of these are made on commission basis. The above, of course, excludes the jacquard branch which has held up relatively well as regards prices, profits and labor relations, and is outside the scope of this article.

Today Paterson has about 10,000 plain looms, the operating personnel of which totals about 5,000. Emphasizing that the city still has two major advantages for textile manufacture—highly skilled labor and proximity to the New York market—some of the town's leaders feel that the new freedom given manufacturers by labor regarding modernization may bring back some of the mills which have moved away in late years. It is hoped that irregularity of delivery, a serious handicap to Paterson during the last decade, may be eliminated.

Some observers, however, remain skeptical. While conceding the importance of any general automatic loom installation in Paterson—if that eventually did come—they contend that Paterson's reputation for irregularity of delivery is so widespread and established, it would take some time to win the confidence necessary to permanent pegging of the decline.

SEEK DYEING REVIVAL

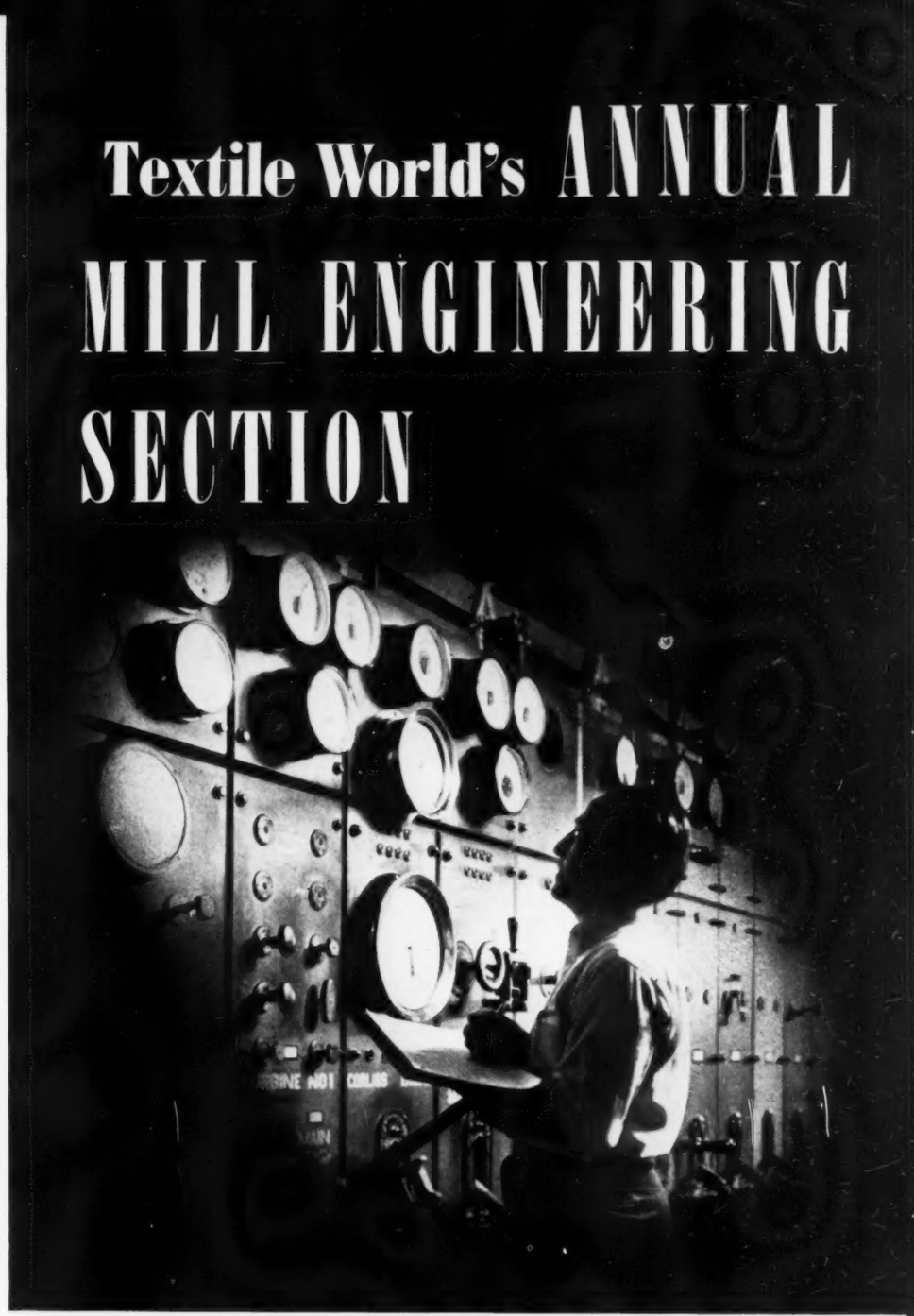
CAN the exodus of the dyeing and printing business be halted? Supporters of the recently formed Dyers and Printers Employers Association hope that successful completion of their present program may restore to firms in the Paterson-Passaic area a considerable part of the dyeing business which has been lost in recent years. The new association comprises about 35 companies, and is still growing. This body effected an agreement as of Sept. 1 with the Federation of Dyers, Printers, Bleachers and Finishers; the chief point of the agreement is that it created a work load board of six members, three employers and three from the Federation; the purpose of the board is to rationalize the work load situation in a way that will be equally fair to mills and workers and will serve to increase efficiency.

The association is a voluntary body; no paid officers or secretary, and no associational overhead; all services are donated and no expenses incurred. The body will have no purpose other than the labor relation function above described. Officers are: President—Chas. Horn, of Empire Piece Dyeing & Finishing Co.; vice-president—Joe Bamford, of Reliance Piece Dye Works; treasurer—Al Bohny, of Modern Central Silk Dyeing & Finishing Co.; secretary—Bert Allen, of Gaede Silk Dyeing Co.

A spokesman expressed the association viewpoint as follows:

"We feel that, out of this new set-up, will come a more efficient basis of operation which will permit us to meet the acute competitive pressure of the South and New England, which result, of course, would be mutually beneficial to employee and employer. We believe that Paterson can get back a lot of dyeing work it has lost, if regularity is assured and rates are reasonable. The skill of the Paterson worker permits faster and better operation, and we are confident that this, among our other important advantages, will aid us in getting back some of the yardage now being placed elsewhere."

Textile World's ANNUAL MILL ENGINEERING SECTION



A Check-Up Tour

AGAIN we give our readers an opportunity to check up on all phases of the engineering department, covering both its equipment and its personnel. In this special Mill Engineering Section, now an annual TEXTILE WORLD feature, we present first a "check-list" of new developments in power generation and transmission; in lighting; in lubrication; in heating, ventilating and humidifying; in water supply and piping; in automatic control of processes—in all the manifold ramifications which make the engineering department so vital a part of a textile manufacturing organization.

A second feature of the Mill Engineering Section is the presentation of two articles—one outlining the organization and operation of the engineering department in a large mill; the other considering the duties of the master mechanic in a small or medium-sized mill. We feel that these two studies will give chief engineers and master mechanics a chance to check their setups against the hypothetical ones described. We shall be particularly glad to receive readers' comments on these two articles.

A third feature of this section concerns a phase of the engineering department's work which has never had sufficient emphasis—that is, its contact with the public and with public problems. In a score or more of ways, the work of engineering executives and of their staffs touches upon the life of the community and makes an impress. Now that industry has come to realize how important sound public relations are, possibly the part engineers play in that field will have more attention. To that end, we have included an article describing the principal ways in which the engineering department makes public contact, with inevitably good or bad effect upon the standing of the mill in the community.

Finally, at the request of several readers, we present a page of practical, useful kinks for mill engineers and master mechanics. — *Editor*

EQUIPMENT & SUPPLIES

A Check-Up List for Engineers and Master Mechanics of New and Improved Products of the Year

A FEATURE of TEXTILE WORLD'S special mill engineering section last year was "A Check-up Tour Through the Mill." The purpose of that tour was to point out to our readers the most up-to-date practices in power generation, power transmission, lighting, lubrication, construction materials, air conditioning, fire protection, intra-plant transportation, water supply and piping, mill maintenance, cleaning, and control instruments. In general, no radical changes have occurred in the practices and trends noted a year ago. On the other hand, many new and improved types of engineering equipment and supplies have been introduced since then.

In order to bring these developments to the attention of our readers, we asked over 300 manufacturers to furnish us with brief descriptions of each product which they have introduced during the last year and which was developed specifically for use in the textile industry or which is particularly applicable for use in such plants. From the information supplied by these manufacturers, we have compiled the following Check-Up List of New Equipment and Supplies for Engineers and Master Mechanics. To facilitate quick and easy reference, the products have been classified under headings mentioned above. For the same reason, descriptions have been kept as brief as possible, being confined to mention of the salient features of each product. Although efforts have been made to include all important items brought out during the last twelve months, with the large number of companies supplying products of interest to the mechanical departments of textile mills, it is possible that some unintentional omissions have occurred. Therefore, we shall appreciate having called to our attention any products not listed, in order that we may describe them in subsequent issues.

POWER GENERATION

BOILER FEED PUMP—Johnson Corp., Three Rivers, Mich. Self-contained pressure-equalizing pump automatically equalizes pressures in receiving chamber of pump unit before pumping contents into boiler; operating cycle of pump controlled electrically; self-contained unit furnished complete and ready for installation for all boilers up to 150 hp., with working pressures up to 125 lb.

BOILER WATER CONTROL — Johnson Corp., Three Rivers, Mich. Redesigned electrode holder; changes in relay which controls make-up valve of pump; introduction of a third electrode which provides for a low-water cut-out circuit.

DIESEL ENGINES—Worthington Pump & Machinery Corp., Harrison, N. J. Type BB vertical direct-injection diesel engines for installations where continuous heavy-duty loads are carried; also for peak-load units for larger plants having other prime movers.

PROCESS HEAT SYSTEM—J. O. Ross Engineering Corp., New York. Superthern system makes use of superheated water at temperatures of 370° F. or higher; can be connected to normal steam-generating units which supply steam for space heating and power plant auxiliaries; fuel savings of 30% over older methods of process heating reported.

PULVERIZER—Babcock & Wilcox Co., New York. Type E pulverizer available in 15 sizes for capacities of 2.5 to 15 tons per hour. Operates on ball-bearing grinding principle; power consumption of pulverizer and fan as low as 9 kw.-hr. per ton under standard conditions; isolation of grinding elements from housing and short, heavy main shaft give smooth, quiet operation; easily adjusted; has fully automatic lubrication.

STOKER—Link-Belt Co., Chicago. Model 15 commercial stoker designed to burn wide variety of bituminous coals and will handle 3,500 sq.ft. of radiation; equipped with Power-Flex burning head designed to maintain active fuel bed over practically whole area of furnace; will burn both low-fusion non-caking and high-fusion caking and coking coals.

STOKERS—Iron Fireman Mfg. Co., Cleveland, Ohio. Dual air spreader stoker has two air conveying systems and feeds coal into boiler through two nozzles; combines advantages of underfeed and overfeed stokers permitting efficient burning of coals high in ash content and low in ash fusion temperature. Redesigned direct-firing unit gives clear access to boiler front for cleaning, and immediate access to stoker operating mechanism; coal is automatically conveyed direct to fire from main bunker.

STOKER FEED, ADJUSTABLE—Detroit Stoker Co., Detroit, Mich. Feed can be applied to existing installations; permits manual or automatic control; makes possible sensitive control of fuel feed to furnace from zero to maximum capacity; unit is fully enclosed.

POWER TRANSMISSION

Motors

ADJUSTABLE-SPEED MOTOR—Crocker-Wheeler Electric Mfg. Co., Ampere, N. J. Three-stage, a.-c. adjustable-speed Polyspeed motor; gives fully continuous speed regulation without rheostat losses; shunt motor characteristics with speed practically independent of load; constant torque, across-the-line starting; remote control if required; speeds between a minimum slightly above standstill and maximum of approximately 1,800 r.p.m.

EXPLOSION-PROOF MOTOR—Reliance Electric & Engineering Co., Cleveland, Ohio. Explosion-proof, squirrel-cage, a.-c. motor, for use in locations in which flammable, volatile liquids, gases or other substances are used or stored.

LOOM MOTOR—Louis Allis Co., Milwaukee, Wis. Line of motors designed for use with modern high-speed looms; easily cleaned "streamline" contour; frame constructed to withstand severe vibration and shock.

SCREENLESS MOTOR—General Electric Co., Schenectady, N. Y. Incorporates ventilating system for positive lint expulsion; winding insulation, developed in G-E research laboratory, is highly resistant to oil, mild chemicals, and moisture.

SELF-CLEANING MOTOR—Louis Allis Co., Milwaukee, Wis. Line of self-cleaning motors designed especially for textile use; windings have smooth, hard, glossy-surface protective coating; ventilating fans and internal motor parts specially prepared to assure absence of rough edges.

SPLASH-PROOF MOTOR—Louis Allis Co., Milwaukee, Wis. Motor for use outdoors, in wet or humid atmospheres, or where subject to dripping and splashing.

SPLASH-PROOF MOTOR—Diehl Mfg. Co., Elizabethport, N. J. Has specially impregnated windings; effective baffling system to prevent entrance of water or falling particles; improved system of ventilation to assure low temperature rise; sealed ball bearings; accessible for lubrication in all mounting positions; conforms to NEMA specifications; available in all NEMA sizes and ratings.

Electrical Control Equipment

CAPACITORS—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Dust-tight capacitors designed for use in plants

with dust-laden atmospheres; several capacitors may be placed side by side about 1 in. apart and connected together if desired; one unit can be removed if necessary without disturbing conduit connections made from one unit to the next.

CIRCUIT BREAKER—Allis-Chalmers Mfg. Co., Milwaukee, Wis. Two moderate-capacity oil circuit breakers—one for outdoor use; other for indoor application.

CIRCUIT BREAKER—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. De-ion indoor circuit breaker for central station and industrial plant use.

DETACHABLE INSTRUMENTS — Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Instruments consisting of two units: socket or mounting device and instrument mechanism with connection blades; socket provides own switchboard; various instruments can be plugged into the same socket.

INSTRUMENTS — Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Improved lines of panel and recording instruments covering the complete range of industrial applications.

LINESTARTER—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. De-ion linestarter in an oversize cabinet providing large amount of wiring space.

LOOM TRANSFORMER — Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Warp-stop transformer for use on looms; design excludes dust, oil, and moisture, and minimizes fire hazards.

MAGNETIC CONTACTOR—Cutler-Hammer, Inc., Milwaukee, Wis. A.-c. magnetic contactors for small, continuous-duty, single-phase and polyphase motors.

MERCURY LIMIT-SWITCH—General Electric Co., Schenectady, N. Y. For use on spinning frames, to limit amount of yarn that can be wound on bobbins, thus reducing necessity of stopping frame before bobbins are actually full in order to maintain doffing schedule and conserving doffing time.

MOTOR STARTER—Allis-Chalmers Mfg. Co., Condit Works, Boston, Mass. Reversing motor starter for 7½ hp., 550 volts, or less.

PHOTOELECTRIC CONTROL—Photoswitch, Inc., Cambridge, Mass. For controlling, signaling, counting, etc.; applications include actuation of thread-break stop motions, operation of feeler switches for tenter guides, etc.

VOLTAGE TRANSFORMERS—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Portable voltage transformers for use with portable instruments and recorders; designed for 115 volts secondary—in small size for primary voltages to 2,300, and larger size for primary voltages from 2,300 to 6,900 volts.

Mechanical Transmission

BEARING METAL, BRONZE—Bunting Brass & Bronze Co., Toledo, Ohio. Cored and solid precision-ground bars for use in making bearings.

BEARINGS, BALL—Fafnir Bearing Co., New Britain, Conn. Tape tension pulley ball bearings for use on spinning frames and twisters; ball bearings for use on twisters and heavy-duty spinning frames; a new series of bearings designed with a smaller cross-section than usual, which is being used in wool spinning spindle applications; special variation of standard ball bearing pitman roll, having greater capacity, for use on heavy-duty twisters, such as are used in the tire-cord industry; series of bearings incorporating a felt seal on one side and a steel shield on the other, which has found application on the top rolls of twisters.

BEARINGS, LOOM—Dodge Mfg. Corp., Mishawaka, Ind. Capillary-oiling type of loom bearing; large oil reservoirs, said to hold several weeks' supply; high-grade babbitt-metal liners designed to reduce friction losses and prevent scored shafts; reservoir prevents oil from running out.

BEARINGS, ROLLER—Link-Belt Co., Chicago. Radial-thrust, single-row and double-row roller bearings in unmounted form; features include free-rolling action with unimpaired loading capacity even in the presence of shaft deflection or misalignment; thrust capacity provided by roller and race-way shapes and by angular position of curved rollers between curved races; radial or thrust or any combination of radial-thrust loads carried equally well.

BEARINGS, ROLLER — Norma-Hoffmann Bearing Corp., Stamford, Conn. Line of precision needle roller bearings, originally developed for wrist-pin applications; recently adapted for use with cam rollers, planetary reduction gears, valve rocker shafts, pump shafts, etc.

BELTING, "COMPENSATED"—Manhattan Rubber Mfg. Div., Passaic, N. J. Condor compensated belt now available with any of three pulley surfaces to meet varied operating conditions—Hycoe, which permits belt to be operated less tightly or at low tension; Style F, red-rubber friction surface, designed for drives where a slight amount of starting slip is necessary; Style B, has Bareback duck pulley surface designed for drives where more slip is desired than provided by Style F.

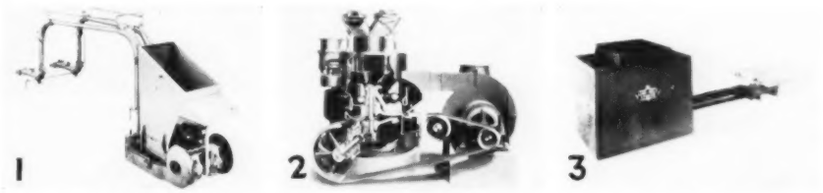
BELTS, ENDLESS—Manhattan Rubber Mfg. Div., Passaic, N. J. Line of Condor Whipcord endless belts expanded to include six styles and weights to cover nearly all endless belt requirements; for extreme slippage or heavy load conditions, can be obtained with Hycoe surface; for drives where some slip is desired, Bareback pulley surface is offered.

BELT, LEATHER—E. F. Houghton & Co., Philadelphia. Okay Tred, a specially tanned leather which is given a mineral retan, said to increase coefficient of friction and make it capable of transmitting higher horsepower; surface of belting is given indentation treatment for purpose of increasing grip and lessening slip; soft grain reduces cracking.

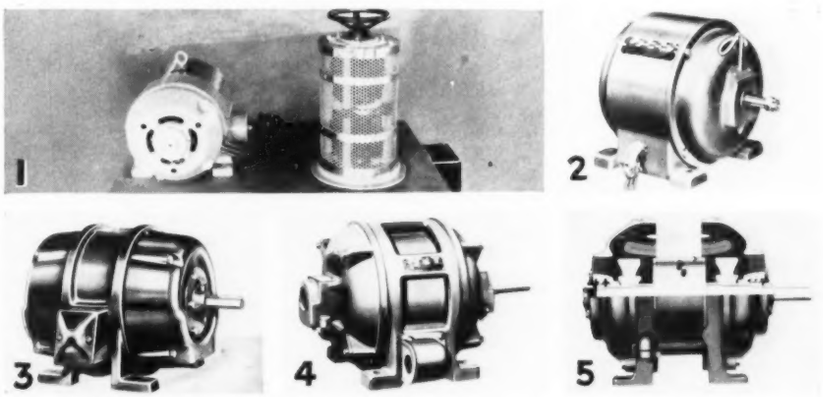
BELTING, OIL-PROOF—Manhattan Rubber Mfg. Div., Passaic, N. J. Oil-proof transmission belting constructed by use of recently-developed synthetic material.

BELTING, ROUND—Sudbury Laboratories, South Sudbury, Mass. Round composition belting with strong center core, designed for light machinery; features include "100% roundness," practically stretchless center core, high friction.

CLUTCH, OVER-RUNNING — Hilliard Corp., Elmira, N. Y. Free-wheeling clutch for production machinery which runs intermittently or with reciprocal motion; clutches transmit power efficiently through operating cycle, then automatically disconnect and idle until power is again applied.

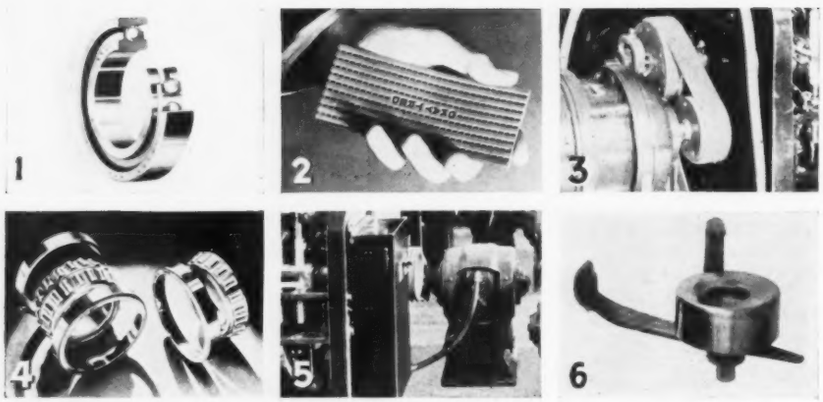


POWER GENERATION—*1. Stoker, Iron Fireman; 2. Coal Pulverizer, Babcock & Wilcox; 3. Stoker, Link-Belt*

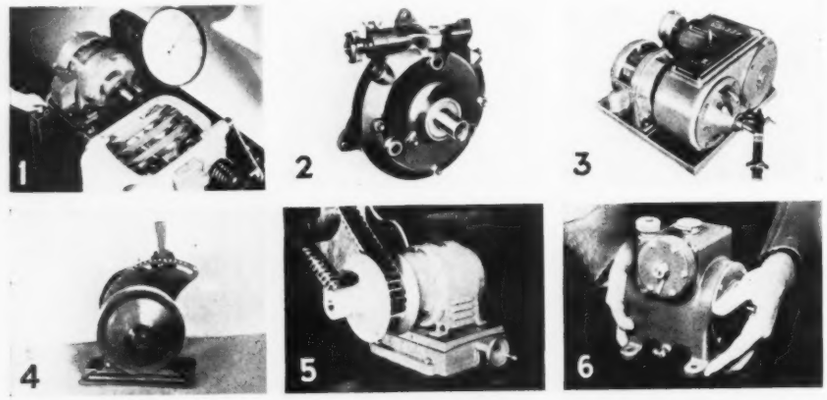


MOTORS—*1. Adjustable-speed motor, Crocker-Wheeler; 2. Loom motor, Louis Allis; 3. Splash-proof motor, Diehl; 4. Self-cleaning motor, Louis Allis; 5. Screenless open motor, General Electric*

CONTROL EQUIPMENT—*1. Mercury limit-switch, General Electric; 2. Detachable instruments, Westinghouse; 3. Circuit breaker, Allis-Chalmers*



MECHANICAL TRANSMISSION—*1. Ball bearings, Fafnir; 2. Leather belting, Houghton; 3. Whipcord belting, Manhattan Rubber; 4. Unmounted roller bearings, Link-Belt; 5. Motor base, Rockwood; 6. Tension pulley, Fafnir*



VARIABLE SPEED—*1. Speed changer, Allis-Chalmers; 2. Variable-speed control, Morse; 3. Motor-drive control, Reeves; 4. Variable-speed transmission, Columbia Vari-Speed; 5. Variable-speed pulley, Lewellen; 6. Variable-speed transmission, Graham*

Flexible Couplings—Link-Belt Co., Chicago. Coupling features a recently-patented divided roller combining advantages of double-roller chain with more rugged and simple construction of single-width chain.

Idler Pulley—SKF Industries, Inc., Philadelphia. Combination ball- and roller-bearing idler for silk and rayon twisting frames; unit may also be incorporated in other light-duty machinery applications where uniform minimum drag is essential; permanently-aligned roller bearing located directly opposite center of belt pulley assures unit of unusually large capacity; ball bearing of unit carries vertical thrust loads; reduces power consumption and belt wear; requires lubrication only once in every 10,000 hr. of operation.

Lagging, Fiber—Rockwood Mfg. Co., Indianapolis, Ind. Lagging for increasing diameter of pulleys and flywheels; said to make possible increases in size of motor pulleys, and hence to result in higher belt speeds and machine capacities.

Loom Drive—Dodge Mfg. Co., Mishawaka, Ind. Friction clutch and flywheel; clutch transmits power from flywheel to loom; once engaged, clutch stays in position without added pressure; entire loom drive, including flywheel, clutch, and outboard bearing, is mounted on full-length sleeve which fits over regular loom crankshaft; drive supplies additional power to loom at the instant pick is made, thereby smoothing out operation and permitting increased speed.

Pillow Blocks—Randall Graphite Products Corp., Chicago. Blocks designed especially for textile machinery to replace outboard foot, center, and head bearings of various types of spinning and twisting frames; can be installed in any position without alteration of frame.

Pivoted Bases—Rockwood Mfg. Co., Indianapolis, Ind. Pivoted bases for industrial gas engines, said to keep belts on machines of this type tight automatically and thus to reduce maintenance costs, increase belt life, and improve driven machine performance. Also pivoted motor rail for fractional horsepower motors; said to keep belts tight regardless of loads or changing belt lengths. Also, various refinements to company's well known spinning-frame drive bases, loom drives, etc.

Variable-Speed

Adjustable Sheave—Allis-Chalmers Mfg. Co., Milwaukee, Wis. Sheave with pitch diameter varying from 2 to 3 in., and from 3 to 4 in.; change is accomplished merely by removing adjustable plate, reversing, replacing on hub.

Adjustable Pitch-Diameter Sheave—Allis-Chalmers Mfg. Co., Milwaukee, Wis. Texsteel sheave for speed variation up to 33% on any driven unit where required load does not exceed 3 hp.

Automatic Motor Drive Control—Reeves Pulley Co., Columbus, Ind. For entirely automatic speed regulation of speed-control mechanism, motor and gear reducer, makes possible synchronization of different machines or separate sections of single machine, maintenance of constant tension and uniform peripheral winding speeds; maintenance of uniform pressure, weight, liquid level, temperature, and other variable elements.

Speed Changer—Allis-Chalmers Mfg. Co., Milwaukee, Wis. Speed changing device utilizing principle of Vari-Pitch sheave; can be adjusted either manually or electrically; can be operated at high speed, permitting use of direct-connected motor.

Speed Control—Morse Chain Co., Ithaca, N. Y. Device for governing speed of output shafts through infinite number of variations within range of unit; rated maximum speed 200 r.p.m.; control has ratio of reduction of 4.5 to 1, infinitely variable from 120 to 1.

Variable-Speed Accessories—Reeves Pulley Co., Columbus, Ind. Speedial, designed to give more accurate indication of speed setting. Fluid pressure control for automatic and remote control of variable-speed drive. Differential which consists of three parallel shafts operating in bath of oil within unit housing.

Variable-Speed Pulley — Lewellen Mfg. Co., Columbus, Ind. Variable-speed pulley which fits shaft of standard motor and drives directly to pulley or sheave on driven shaft.

Variable-Speed Device — Graham Transmissions, Inc., Milwaukee, Wis. Ingenious tractional device automatically maintains drive pressure in proportion to both load and speed; maintains torque all the way to zero speeds; transmits full power over a range of 4:1, while making possible speeds in infinite steps from any desired maximum to zero and reverse.

Variable-Speed Transmission—Ideal Commutator Dresser Co., Sycamore, Ill. Device gives infinite selection of speeds over 5:1 or greater ratio by simple movement of control lever; utilizes V-belt.

Variable-Speed Transmission, Fractional-Horsepower — Columbia Vari-Speed Co., Wheaton, Ill. Unit provides speed range of 5 to 1; operates on variable-pitch-pulley principle; uses V-belts.

LIGHTING

Color-Correction Unit — Science Laboratories, Inc., Cincinnati, Ohio. Unit to provide illumination in which deficiency of blue light as produced by incandescent lamps is supplemented with color corrected output of two low-pressure mercury tubes.

Color-Examination Fixture—Barkon-Frink Tube Lighting Corp., Long Island City, N. Y. Fluorescent tube fixture for color examination and general inspection.

Color Identification Box—Macbeth Daylighting Co., Inc., New York. Unit contains three 1,000 watt Mazda bulbs, Corning Daylite filters, Horizon-Sunlight which magnifies color differences under ordinary artificial light, and diffusing frame; light produced sufficient for two men to match colors under exact reproduction of overcast north-sky daylight.

Color-Matching Lamp—Barkon-Frink Tube Lighting Corp., Long Island City, N. Y. Bench-model carbon-dioxide color-matching lamp.

DIFFUSER, SILVERED BOWL—Benjamin Electric Mfg. Co., Des Plaines, Ill. Reflector designed to utilize indirect lighting characteristics of silvered-bowl Mazda lamp, features greater eye comfort at low cost.

DIFFUSER, SILVERED BOWL—Westinghouse Electric & Mfg. Co., Cleveland, Ohio. For general lighting of low-bay areas; unit consists of dome-shaped porcelain-enameled reflector, inner aluminum reflector, and socket assembly.

FLUORESCENT LAMPS—General Electric Co., Cleveland, Ohio. Wide range of colored lights, producing, in some cases, as much as 120 times the illumination for current consumed of filament lamps of same color, and with much less heat generation; one type said to produce nearest approach to natural daylight ever achieved directly at such high efficiency.

FLUORESCENT LAMP UNITS—Fostoria Pressed Steel Corp., Fostoria, Ohio. Well-known canopy types adapted for use with fluorescent lamps; overhead, bench, table, trolley-track, or portable types available.

HOOD—Curtis Lighting, Inc., Chicago. Light hood for use with silvered-bowl lamps; designed to produce high-intensity, uniform light, with low brightness and minimum glare; particularly adapted to lighting of hosiery and other knitting mills.

LOCALIZED CANOPY UNITS—Fostoria Pressed Steel Corp., Fostoria, Ohio. Unit provides large-area, low-brightness illumination of type which reduces eyestrain and fatigue; light source shielded so no direct rays can reach worker's eyes or working area.

MERCURY-INCANDESCENT COMBINATION UNIT—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Combination unit mixes light lumens of mercury lamp with those of incandescent lamps; for applications where color correction is desirable.

MERCURY-LAMP TRANSFORMER—General Electric Vapor Lamp Co., Hoboken, N. J. Transformer, designed to operate two mercury lamps at peak efficiency and 90 to 95% power factor; savings cited include 20% in transformer costs and 30% reduction in transformer losses, in comparison with two single-lamp units.

MERCURY UNIT, COOPER HEWITT-TYPE—General Electric Vapor Lamp Co., Hoboken, N. J. New models operate at 350 watts, a.c., to supply same light output which required 450 watts in previous models; smaller size operates at 280 watts in contrast to a previous 350; features include redesigned enameled reflectors, increased over-all efficiency, true horizontal mounting, instantaneous starting and restarting.

PROJECTOR LAMP — General Electric Co., Cleveland, Ohio. Lamp for highlighting small areas; reflector and prefocused filament permanently fixed during manufacture; inside-frosted lens cover diffuses light evenly and reduces chances of light-absorbing substances to cling to outer surface.

REFLECTOR, LOCKING—Westinghouse Electric & Mfg. Co., Cleveland, Ohio. "Locklite" unit, arranged so that lamps will not light until reflectors are locked on to hood; installation speeded; maintenance reduced; safety increased; units interchangeable.

SEWING-MACHINE FIXTURE—Fostoria Pressed Steel Corp., Fostoria, Ohio. Vibration reduced to a minimum, flexibility retained; scientifically designed reflector accommodates standard type lamps.

LUBRICATION

FILLER TANK—Alemite Division, Stewart-Warner Corp., Chicago. Holds 35 lb. of grease; easy to carry from place to place; obviates returning to lubricant drum when grease gun becomes empty; grease guns easily filled by few strokes of crank pump; pump works only when gun is attached to spout.

KNITTING-MACHINE OIL—Texas Co., New York. Two oils—one for lubrication of all full-fashioned knitting machine parts with exception of needles, other especially for needles, narrowing points, sinkers, etc.; first-mentioned prevents formation of oxide or rust in bearings of rocker shaft, back catch bar, and other oscillating motions, thus eliminating considerable stock spoilage; needle oil assists in maintaining uniformly smooth surface of delicate mechanisms.

LOOM AND BEARING OIL—Shell Union Oil Corp., New York. For lubrication of looms, full-fashioned knitting machine bearings, cams, cam rollers, eccentric motions of reducers, and lap motions of cards; have high adhesive qualities, eliminating oil splatter; are free from soaps or fillers; easily removable from fabrics.

LUBRICANTS—Texas Co., New York. Line of fluid and semi-fluid lubricants for use on looms, saddles, top rolls, and other textile machinery; have strong resistance to shock and vibration; do not splatter or drip; provide full lubrication; give protection against stock spoilage.

LUBRICATOR, PRESSURE — American Chain & Cable Co., Inc., York, Pa. Supplies oil at pressures up to 1,000 lb.; flushes out grit and dirt at same time oil goes into bearing; can be used on any common oil hole without special fittings.

LUBRICATOR, SMALL-CAPACITY — Bijur Lubricating Corp., Long Island City, N. Y. Lubricator for very light machinery; has reservoir capacity of $\frac{1}{4}$ pt.; discharges as little as ten drops of oil.

NEEDLE OIL—Shell Union Oil Corp., New York. Lubricant for needles, narrowing points, and fingers of full-fashioned hosiery machines; also used on points of transfer bars to prevent rusting during week-end shut-downs, and on circular knitting machines, ribbers and flat knitters; has high adhesive quality which eliminates dripping; is free of gum-forming materials.

SHEAR-BLADE LUBRICANT—Shell Union Oil Corp., New York. Developed especially for shear-blade lubrication, satisfactory for use on light-duty, high-speed looms; features include high adhesion; good emulsifying qualities.

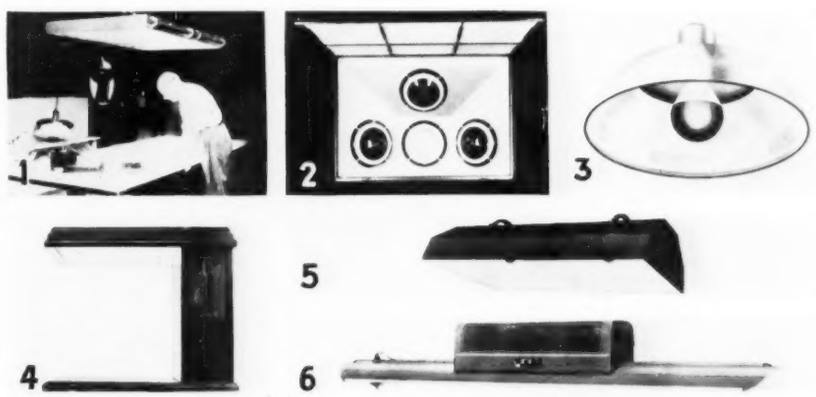
SPINDLE OIL—Texas Co., New York. For high-speed, large-package spinning frames; features include low power and oil consumption; elimination of lagging and vibrating spindles; has high resistance to deterioration in service.

CONSTRUCTION MATERIALS

BONDING MATERIAL—Flexrock Co., Philadelphia. New primer, processed with cellulose, for bonding resurfacing material to concrete in repairing broken places; can also be used for attaching rubber or asphalt tile, stair treads, etc.

COLORING AND DUSTPROOFING METHOD—Truscon Laboratories, Detroit, Mich. Flor-Dye surface treatment for concrete floors; for application on unpainted surfaces; oil-proof; generally stain-proof; easily cleaned; has long life.

FLOORING, MAPLE—Robbins Flooring Co., Rhinelander, Wis. New-type flooring in which face or top surface is edge grain of the wood; product is built up by laying edge-grain maple in short, uniform lengths.



LIGHTING—1. Fluorescent lamps, General Electric; 2. Color-identification box, Macbeth; 3. Silvered-bowl diffuser, Westinghouse; 4. Color-matching lamp, Barkon-Frink; 5. Localized-light canopy, Fostoria; 6. Cooper Hewitt-type lighting unit, G. E. Vapor

LUBRICATION—1. Pressure lubricator, American Chain; 2. Filler tank, Alemite; 3. Small-capacity lubricator, Bijur

FLOORING, NON-SKID—American Brake Shoe & Foundry Co., New York. Rust and corrosion-resistant non-slip safety metal for flooring and stair treads.

FLOORING MATERIALS, SAFETY—Ohio Rubber Co., Willoughby, Ohio. Resilient hard-rubber safety treads and flooring; available in either tile or sheet form.

ROOFING, GALVANIZED—American Rolling Mill Co., Middletown, Ohio. New type roofing, known as Seal-Krimp, with patented spring-pressure lap; uses include roofs and siding for mills and other structures.

STEEL-CLAD CONSTRUCTION METHOD—United States Steel Corp., through its subsidiary Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Method of house construction, using standard design wood frame with standard stock steel sheets for outside and inside wall finish and roof.

AIR CONDITIONING

AIR CONDITIONER—York Ice Machinery Corp., York, Pa. Yorkaire conditioner has built-in reserve capacity to remove excess humidity; refrigerating unit, fan, and motor cushioned-mounted, and casing acoustically-treated; equipped with York Balanseal refrigerating unit; gives automatic control of air temperatures.

CONDENSING SYSTEMS—York Ice Machinery Corp., York, Pa. Uses harmless refrigerant Freon-12; complete range of standard sizes for single or multiple compressor applications available; a similar York condenser incorporates the Balanseal feature, a simplified three-part, friction-reducing mechanical closure requiring no packing or adjustment, which seals against refrigerant losses.

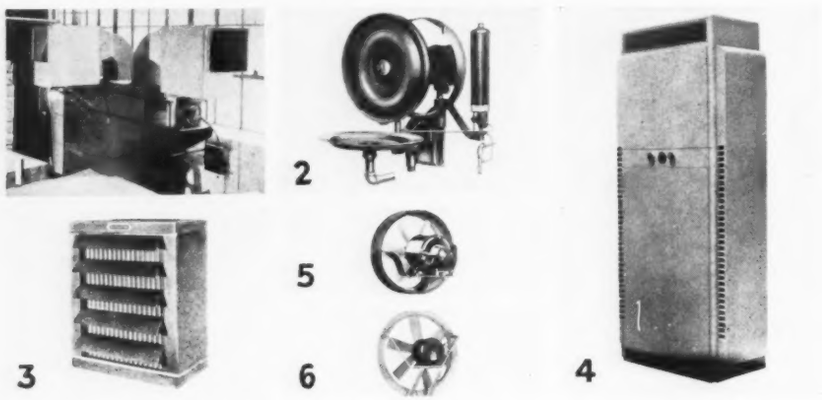
COOLING AND HUMIDIFYING SYSTEMS—B. F. Sturtevant Co., Hyde Park, Boston. Vap-Air Blender System features low cost with guaranteed summer temperature reduction and constant maintenance of relative humidity. Central Blender System is custom-made of either several unit systems or one large system; generally used for rooms requiring 65% relative humidity or less. Dual Blender System is same as Central Blender System with the addition of supplementary moistening heads throughout the room; generally used for rooms requiring over 65% relative humidity.

FAN, EXHAUST—DeVilbiss Co., Toledo, Ohio. Designed to effect rapid movement of a large volume of free air; available with $\frac{1}{4}$ hp. or $\frac{1}{2}$ hp. motor; makes possible movement of 5,250 cu.ft. or 6,350 cu.ft. of air per min., respectively, at 1,725 r.p.m.

FAN, EXPLOSION-PROOF—Autovent Fan & Blower Co., Chicago. Designed for use wherever explosive dusts, gases, and chemical fumes exist; fan wheels are of copper, brass, or other non-ferrous metals; base-mounted motors for constant speed only; all controls placed outside of room.

FAN, PROPELLER TYPE—Propellair, Inc., Springfield, Ohio. Newly designed fan wheels make it possible to overcome resistances such as encountered in duct systems, at low initial and maintenance cost; available in various sizes and horsepower ratings.

FAN, ROOF VENTILATOR—DeBothezat Ventilating Equipment Div., American Machine & Metals, Inc., New York. Said to make possible positive roof ventilation under every atmospheric condition.



AIR CONDITIONING—*Humidity box, Air Conditioning Supply; 2. Humidifier, Southworth; 3. Unit heater, American Blower; 4. Unit air conditioner, York; 5. Propeller-type fan, Propellair; 6. Explosion-proof fan, Autovent*

HEATERS—B. F. Sturtevant Co., Hyde Park, Boston. Speed heaters drive heated air down, diffusing over wide area; fans circulate and recirculate air keeping up continuous heating cycle; well adapted to automatic control; four smaller sizes adaptable to offices, etc.; six larger sizes adaptable to any commercial or industrial heating application where noise is not objectionable. Rexvane heaters embody a fan which will handle a large volume of air with comparative quietness at a high efficiency and low horsepower; leak-proof heating element designed to operate on either high or low pressure; obtainable in three types—floor, wall, and ceiling.

HUMIDIFIER—Air Conditioning Supply Co., Cleveland, Ohio. Type C, 4 in. wide and 3 in. deep, can be fitted into warm air plenum chambers, ducts and cabinets, where minimum space is available; regularly made in lengths of 20, 30, and 40 in.; special lengths available.

HUMIDIFIER—Charles B. Johnson, Paterson, N. J. Air-Perme-Ator maintains any desired humidity in any confined space, without releasing free moisture; compact and occupies small floor space; moderate supply of water and electrical plug-in only permanent connections.

HUMIDIFIERS — Southworth Machine Co., Portland, Maine. Model D, disk type, has totally inclosed motor and flexible coupling fan drive; can be used with an independent source of power.

HUMIDIFYING SYSTEM—Spray Engineering Co., Somerville, Mass. System made up in unit assemblies; maintains humidity within close limits over wide range; spray heads produce fine degree of atomization, eliminate precipitation and drip.

HUMIDITY BOX—Air Conditioning Supply Co., Cleveland, Ohio. Essentially a high-efficiency spray or fog chamber, provided with water filter and nozzle, air filter-eliminator or baffle, and drain fitting; can be used in connection with blower type or propeller-fan-type unit heaters, or any warm air current, whether in free air or in a duct.

INTAKE—Bahnson Co., Winston-Salem, N. C. Bahnson L-Intake, maintains proportions of room air and fresh air by automatic thermostatic control; allows constant observation of humidifying, cooling, heating, and ventilating controls; to be used with open type humidifiers; can be located either in windows or wall.

UNIT HEATERS—Herman Nelson Corp., Moline, Ill. Designed for steam or hot water heating of industrial and commercial buildings; efficient in space heating and quiet in operation.

UNIT HEATERS—American Blower Corp., Detroit, Mich. Sirocco type has iso-formed air flow outlet cowls; connectors operating on steam pressures from 2 lb. to 200 lb. and tested at 1,000 lb. hydrostatic pressure; available in V-belt and direct-connected units in floor, ceiling, wall, or inverted wall models. Venturafin type heater has high velocity for plants hard to heat and low velocity for quiet operation; certified sound ratings; streamlined inlets; epicycloidal propeller fan; logarithmic louvres.

UNIT HEATERS—Modine Mfg. Co., Racine, Wis. Range of Textype heaters extended to include capacities of 114 to 906 sq.ft. of radiation; particularly applicable in lint-laden rooms and dyehouses.

VENTILATING UNIT—South Bend Air Products, Inc., South Bend, Ind. Dynaflow ventilating unit, featuring redesigned fan blades said to insure uniform air velocity across entire blade area, and venturi intake designed to prevent backflow and eddies.

FIRE PROTECTION

FIRE CONTROL—Rockwood Sprinkler Co., Worcester, Mass. Consists of a detecting device actuated by abnormal rises in temperature, and suitable controls at sprinklers actuated by detecting device; arranged to shut off air-conditioning fan motors, close dampers, and deluge filters with water; suitable for use with duct-type air-conditioning installations.

FIRE EXTINGUISHER—Pyrene Mfg. Co., Newark, N. J. Pyrene 2-qt. pressure type with pump is equipped to deliver a fan-shaped spray as well as a solid stream; suitable for use where there is lint, inflammable liquid, and electrical hazard.

FIRE-HOSE VALVE—Rockwood Sprinkler Co., Worcester, Mass. Designed to prevent freezing in fire-protection piping and to minimize loss of water from leaky

underground fire-protection piping; can be located in various points throughout a property so that there will be no water in the exposed sections of piping.

FIRE PUMP, SPECIAL-DUTY—Clark Trucktractor Co., Battle Creek, Mich. Centrifugal type pump which can be installed on the front end of any Clarktor-6 Tructractor; said to meet all requirements of National Board of Fire Underwriters and to handle water from hydrants, ponds, creeks, reservoirs, etc.

PLAY PIPE—Pyrene Mfg. Co., Newark, N. J. Phomaire PP24, makes 500 to 750 gal. of fire-smothering foam per min., and produces 350 gal. of foam from 1 gal. of Phomaide solution; can be operated by one person.

INTRA-PLANT TRANSPORTATION

BEAM TRUCK—Stackbin Corp., Providence, R. I. Hydraulic truck particularly useful for very large beams; extreme lowered height of the truck is 8 in. and raised height is 28 in.; total width 16 in.

BEAM TRUCK—Revolvator Co., North Bergen, N. J. Hydraulic truck with lowered height of 7¼ in. and raised height of 34 in.; measurements: 5-ft. over-all length not including handle, 17-in. over-all width; capacity 1,000 lb.

CHAIN HOIST—Ford Chain Block Div., American Chain & Cable Co., Bridgeport, Conn. Ball-bearing, spur-geared chain hoist; greater efficiency; less operating effort.

CONVEYOR BELT—Mechanical Goods Div., United States Rubber Products, Inc., New York. Crepe-finish, for packaged material on a greater degree of incline than is normally encountered.

CONVEYOR DRIVE—Mathews Conveyor Co., Ellwood City, Pa. Can be located at any point along the length of a belt conveyor in or outside of a certain room or area, or beneath the conveyor, or even within the confines of the conveyor frame.

DOLLIES—Mathews Conveyor Co., Ellwood City, Pa. Two types: one making use of swivel casters in all four corners of dolly, and the other making use of two swivel casters and two rigid casters; in each case all wheels incorporate compensating features which allow for unevenness in floor surface to minimize possibility of spillage.

ELEVATOR—Revolvator Co., North Bergen, N. J. Designated "Wallclimber"; rails, cables, anchorage and counterweights take up only 11 in., along one side, while elevator machinery is located overhead; capacities range up to 5,000 lb .and car size to 7x10 ft.

FLOOR-PROTECTIVE WHEELS — Lewis-Shepard Sales Corp., Watertown, Mass. Celeron wheels are formed of macerated cotton duck impregnated with phenolic resin.

HYDRAULIC LIFT TRUCK — Lewis-Shepard Sales Corp., Watertown, Mass. Lifting operation is accomplished by means of foot pedal; standard capacities up to 8,000 lb. and lifts of from 3 to 7 in.

MATERIALS - HANDLING METHOD — Lewis-Shepard Sales Corp., Watertown, Mass. Jackmaster system consists of a skid having wheels on one end only, and a two-wheel lifting unit which attaches to the front end of the skid.

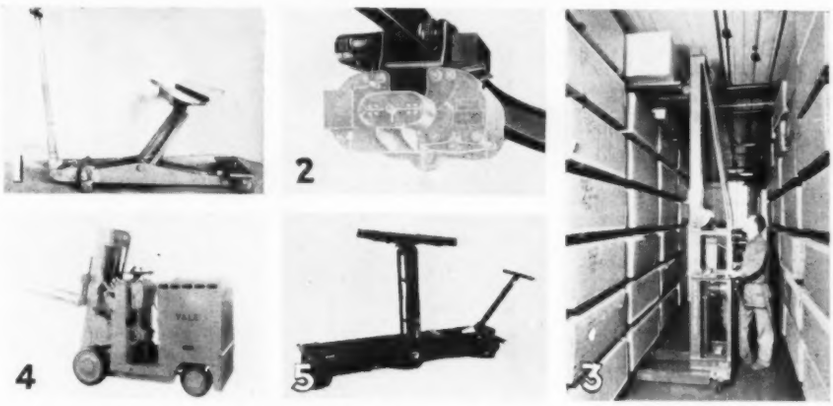
SPOOL TRUCK—Lewis-Shepard Sales Corp., Watertown, Mass. Features: completely arc-welded; tilt-type running gear; rubber tires; roller bearings; pressure lubrication; for large spools.

STACKER—Lewis-Shepard Sales Corp., Watertown, Mass. Stacker is easy to maneuver in cramped quarters, designed for use with selective-type storage racks; permits removal of any case without disturbing others.

TILTING FORK TRUCK—Yale & Towne Mfg. Co., Philadelphia. Model K41, available in capacities of 1,500 to 20,000 lb.; affords operator clear visibility at all times and protection from accidental injury.

TROLLEY CONVEYORS—American Engineering Co., Philadelphia. One type is a motor trolley with all four wheels gear-driven, balance secured by means of adjustable counter-weights, and headroom varying from 1 ft. 9 in. to 3 ft. 10 in.; available in capacities of 1 to 3 tons. The second is a light-duty, antifriction trolley suitable for use with endless-chain power-operated type of trolley conveyors, or as a manually operated individual trolley; capacity 150 lb.

FIRE PROTECTION—*1. Extinguisher, Pyrene; 2. Tractor-mounted pump, Clark*



INTRA-PLANT TRANSPORTATION—*1. Beam truck, Stackbin; 2. Overhead conveyor, American Engineering; 3. Stacker, Lewis-Shepard; 4. Tilting fork truck, Yale & Towne; 5. Beam truck, Revolvator*

WATER SUPPLY AND PIPING

AIR ELIMINATOR—Gorton Heating Corp., Cranford, N. J. High-pressure, automatic air eliminator, for quick and automatic venting of dryers, steam coils, steam mains, unit heaters, etc.

BUCKET, ACID—B. F. Goodrich Co., Akron, Ohio. "Flexite" bucket, made of semi-flexible material, said not to crack or break under normal use.

FILTERING EQUIPMENT—Hungerford & Terry, Inc., Clayton, N. J. Air-water-wash filter, completely non-ferrous in construction; has great ability to withstand corrosion and deterioration when filtering chemically-treated coagulated water; guaranteed to produce water with as little as one part iron in 100,000,000 parts water.

FLOC-FORMER — Permutit Co., New York. Unit aids in coagulation of impurities in water; resulting floc settles more rapidly and is removed from water in settling basin.

HEATING SYSTEM, SLASHER—Johnson Corp., Three Rivers, Mich. Speed-heet system for heating and removing condensate from cotton-slasher cylinders; features special type rotary pressure joint and siphon unit; said to increase production, decrease stretch and breakage.

LIQUID TRANSPORTATION SYSTEM—Morehead Mfg. Co., Detroit, Mich. Liquivator for automatic transportation of liquids by means of displacement principle; suitable for handling of condensate, and for boiler feeding purposes.

PIPE—American Rolling Mill Co., Middletown, Ohio. Armco spiral-welded pipe, available in diameters from 6 in. to 36 in. and in lengths up to 50 ft.; choice of lengths and wall thicknesses.

PIPE UNIONS—Rockwood Sprinkler Co., Worcester, Mass. All-steel unions with two molybdenum seats; entire union, including threading, heavily coated with zinc.

PUMPS, CENTRIFUGAL—Allis-Chalmers Mfg. Co., Milwaukee, Wis. Two-stage pump for heads up to 525 ft., 3,550 r.p.m.

PUMPS, CENTRIFUGAL—Goulds Pumps, Inc., Seneca Falls, N. Y. Single- and two-stage Close-Cupld pump of centrifugal design, for handling ordinary and corrosive liquids. Capacities: 5 to 1,600 gal. per min. and heads up to 525 ft.

PUMP, CENTRIFUGAL—Lawrence Pump & Engine Co, Lawrence, Mass. Single-stage, side-suction, centrifugal pump; capacities: 10 to 15,000 gal. per min.; heads up to 300 ft. in smaller sizes.

PUMPS—Ingersoll-Rand Co, Phillipsburg, N. J. Class GT two-stage centrifugal pump, a ball-bearing unit designed to operate at modern motor, turbine, and engine speeds; available in capac-

ities from 100 to 2,200 gal. per min. Class CRV end-suction centrifugal pump, single or two-stage construction, open or closed impeller, and a variety of drives; available in capacities up to 1,000 gal. per min. and heads up to 500 ft. Class TRV turbine-driven pump combines turbine and pump as one unit on a common shaft; capacities: 5 to 1,000 gal. per min.; no special foundation required.

PUMP UNIONS—Crane Co., Chicago. Forged steel line developed for use with air, steam, water, oil, or gas; can be repeatedly taken apart and reassembled.

RATE-OF-FLOW INDICATOR — Permutit Co., New York. Used with water-treating equipment; indicator permits control of flow through units of a battery.

SOFTENING EQUIPMENT — Hungerford & Terry, Inc, Clayton, N. J. Inversand softening filter, a compact, easily operated unit which clarifies and softens in one operation. Greensand-base water-softening zeolite, a refill zeolite for antiquated water softening equipment, or can be used for stepping up capacity of apparatus of outgrown capacity. Gravel-retaining screen, for maintaining level and undisturbed gravel beds in water softening apparatus; cuts down zeolite, salt waste, increases efficiency of apparatus.

VALVE, ELECTRICALLY OPERATED — McDonnell & Miller, Chicago. Valve designed to insure tight closure against water or fluid pressure up to 150 lb., and to assure positive operation where highest degree of dependability is essential; capacities range from 1,000 to 3,200 lb. per hr.

VALVE, GATE—Jenkins Bros., New York. U-bolt gate valve featuring renewable "bonnet-saver bushing."

VALVE, LEVER—A. W. Cash Co., Decatur, Ill. For use with steam, air, oil, hot or cold water, and most gases; features included free movement, accurate stem alignment, tight seating, longer packing life, and minimum friction.

VALVE-OPERATING BEVEL GEAR—Condenser Service & Engineering Co., Inc., Hoboken, N. J. Gear designed to operate freely through angle of 135°; used in connection with valves difficult to reach, or other remote control application.

WATER SUPPLY AND PIPING—*1. Centrifugal pump, Allis-Chalmers; 2. Air-eliminator, Gorton; 3. Centrifugal pump, Lawrence Pump & Engine; 4. Electrically operated valve, McDonnell & Miller; 5. "Liquivator," Morehead; 6. Water cooler, Westinghouse; 7. Acid bucket, Goodrich; 8. Water cooler, General Electric; 9. Centrifugal pump, Goulds; 10. Centrifugal pump, Ingersoll-Rand*

WATER COOLER—General Electric Co., Commercial Refrigeration Section, Cleveland, Ohio. Designed for use in lint- and dust-laden places.

WATER COOLER—Westinghouse Electric & Mfg. Co., Mansfield, Ohio. For commercial or industrial use; available in 115-volt, 25 and 60 cycle current models; capacities 8.5 to 18.9 gal. per hr.

MILL MAINTENANCE

AIR TOOLS, ROTARY—Cleveland Pneumatic Tool Co., Cleveland, Ohio. No. 9 series of rotary air drills, grinders, screw drivers, and nut setters; simple, economical, compact, and light; air regulator in head and Zerk fittings.

ELECTRODE—Harnischfeger Corp., Milwaukee, Wis. Electrode designed for welding chrome-nickel stainless steel; percentage of both chromium and nickel is higher than in usual 18-8 type; low carbon content insures high resistance to corrosion.

ELECTRODE — Lincoln Electric Co., Cleveland, Ohio. Electrode designed for depositing soft, machineable alloy on cast iron; weld area can be machined, sawed, drilled, tapped without difficulty if correctly applied.

LATHE GRINDERS—Wodack Electric Tool Corp., Chicago. Two types of portable lathe grinders one equipped with tool post shank, other with angle plate for mounting on machine tools; short mandrel for internal grinding.

PAINT—American Asphalt Paint Co., Chicago. Interior paint with extreme resistance to corrosion by acids, chemicals, alkalis, water, fumes; dries in 12 hr.; uses—bleacheries, underground and inside pipe lines, acid baths, coatings of tank interiors.

PAINT—American Asphalt Paint Co., Chicago. Line of mill white paints; features include high light reflectivity, maximum whiteness, permanent resistance to yellowing action of fumes and vapors.

PIPE VISE STAND—Oster Mfg. Co., Cleveland, Ohio. Vise equipped with power unit and chuck which enable user to thread, cut, and ream by power all sizes of pipe up to 2 in.

SETSCREWS, CUP POINT—Standard Pressed Steel Co., Jenkintown, Pa. Setscrews with knurled points; loosening or backing-off is impossible except by application of a wrench.

SHAPE-CUTTING MACHINE—Linde Air Products Co., unit of Union Carbide & Carbon Corp., New York. Portable Oxweld shape-cutting machine; weighs less than 200 lb.; cutting area 60 in. x 18 in.

CLEANING

CLEANING SYSTEM, CENTRAL — B. F. Sturtevant Co., Hyde Park, Boston. Stationary industrial vacuum cleaning system; flexible yet efficient; cleaning time and cost reduced; dirt and dust disposed of in a separator at remote location.

CLEANERS, HUMIDIFYING EQUIPMENT—Oakite Products, Inc., New York. Airefiner, an active bactericidal agent, prevents slime, etc., in systems where mechanical water loss is negligible; for systems to which considerable water is constantly added, an Oakite preparation for periodic cleaning during shutdown periods is recommended.

CLEANERS, SPRAY—Homestead Valve Mfg. Co., Inc., Coraopolis, Pa. Steam vapor cleaners for removing grease, dirt, mud, oil, etc. from motors, machinery, floors, building exteriors, etc.; portable and stationary models, oil burners, operate at pressures up to 150 lb. and 110 lb., respectively.

CLEANING AIDS—Pittsburgh Plate Glass Co., Pittsburgh, Pa. Several cleaning and repairing products, including paint cleaner, basic cleaner, floor cleaner, brush cleaner, crack filler, patching plaster.

DUST COLLECTORS—Sturtevant Mill Co., Dorchester, Mass. Two processes—one entirely wet, other combination wet-

dry, for dust collection; latter used when it is desirable or necessary to collect dust in the dry form.

FLOOR CLEANERS—Finnell System, Inc., Elkhart, Ind. 15- and 18-in. brush spread electric floor scrubbers, rinsers, and dryers; particularly applicable to congested areas, such as weave-room alleys and narrow spinning-machine lanes.

WIRE PADS—Metal Textile Corp., Orange, N. J. Cleaning pads of Monel and nickel wire; one-piece construction; made to fit special wooden handle; long life due to corrosion and wear resistance.

CONTROL INSTRUMENTS

CONTROLLER, CYCLE—Bristol Co., Waterbury, Conn. Single-cam air-operated controller for as many as four separate operations. Cam designed to be cut to meet wide variety of requirements; additional flexibility provided through use of adjustable segments; special mechanism makes possible two different speeds of rotation before cam completes a cycle.

CONTROLLERS, INDICATING—C. J. Tagliabue Mfg. Co., Brooklyn, N. Y. Direct-set indicating controllers. Model 9-TIC for temperature and Model 9-PIC for pressure; can be supplied in either "On-Off" or throttling types. Both types have direct set feature.

CONTROLLER, RESET—Bristol Co., Waterbury, Conn. Reset free-vane controller applicable to various types of continuous processes involving control of temperature, pressure, vacuum, flow, liquid level, etc.; provides wide throttling range with automatic reset for process control.

GAGE SAVER—Ashcroft American Gage Div., Manning, Maxwell & Moore, Inc., Bridgeport, Conn. Device designed to save wear on gage movements wherever pressure pulsations are especially severe and also to prevent corrosion and fracture of Bourdon spring.

HUMIDSTAT—Julien P. Friez & Sons, Baltimore, Md. Four improved models for automatic control of relative humidity. Features: high sensitivity through use of multiple human hair elements; available with and without dual magnetic snap action and with various contact arrangements; 10% to 100% relative humidity range.

INDICATING THERMOMETER—Foxboro Co., Foxboro, Mass. "Mono-therm" thermal system said to insure faster response, full-scale accuracy, less wear.

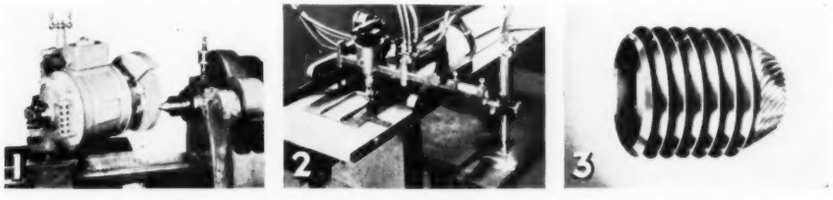
POTENTIOMETER PYROMETER, RECORDING—Brown Instrument Co., Philadelphia. Multiple recording device for precision measurement of temperatures; has legible multi-color record, easily decipherable; capable of recording two to six temperatures from as many different thermocouples.

PROCESS TIMER—Zenith Electric Co., Chicago. Synchronous program clock and process timer. Features include 24-hr. and 1-hr. dial.

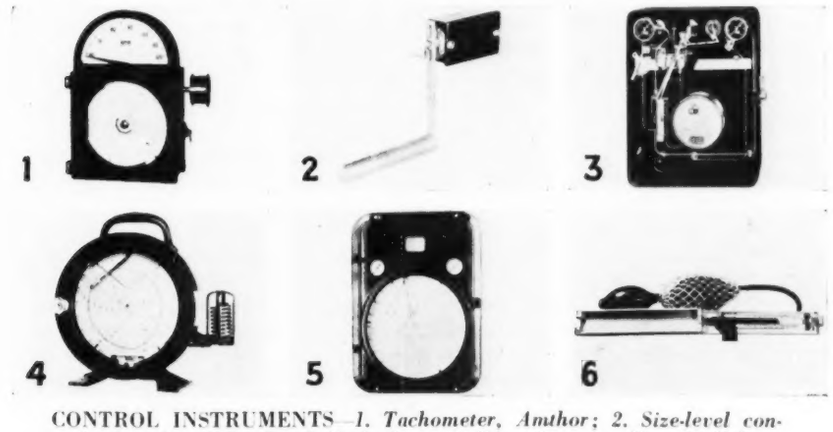
PSYCHROMETER, HAND-ASPIRATED—Julien P. Friez & Sons, Baltimore, Md. By means of hand-pump assembly, air is forced through venturi throat between thermometers and action of venturi causes air to be induced from the sides across the wet and dry bulb; suitable for locations where it is undesirable or impossible to use sling psychrometers.

PSYCHROMETER, SLING—Julien P. Friez & Sons, Baltimore, Md. Fitted with carefully matched thermometers of new oval bore, capillary, mercury-filled type; standard range 10 to 110° F. with ½° graduations.

PYROMETER, PORTABLE—Bristol Co., Waterbury, Conn. Instrument not affected by vibration; no continuously moving parts; galvonometer arm is free to deflect at any time.



MILL MAINTENANCE—*1. Lathe grinder, Wodak Electric; 2. Shape cutter, Linde; 3. Cup-point setscrew, Standard Pressed Steel*



CONTROL INSTRUMENTS—*1. Tachometer, Amthor; 2. Size-level control., American Schaeffer & Budenberg; 3. Recorder-controller, Tagliabue; 4. Recording thermometer, Brown Instrument; 5. Controller, Bristol; 6. Hand-aspirated psychrometer, Friez*

RECORDERS AND CONTROLLERS—C. J. Tagliabue Mfg. Co., Brooklyn, N. Y. New line of recorders and recorder-controllers features interchangeable calibrated tube system which can be readily replaced and need be checked at one point only; available in either "On-Off" or throttling control model, latter permitting easy adjustment of throttling range to coincide with any considerable apparatus lag.

RECORDERS, ROUND-CHART—Julien P. Friez & Sons, Baltimore, Md. For recording temperature and relative humidity direct from remote distances; distance between transmitting elements and recorder does not affect accuracy of records obtained; only connection required is low-voltage wire.

RECORDING THERMOMETER, PORTABLE—Brown Instrument Co., Philadelphia. Mercury bulb is located so as to respond quickly and accurately to changes in surrounding temperature; measuring system is not affected by temperature of instrument case; easily read chart gives 24-hour record of temperature.

SLASHER CONTROL SYSTEM—American Schaeffer & Budenberg Instrument Div., Manning, Maxwell & Moore, Inc., Bridgeport, Conn. Improved slasher control system, for controlling temperature of individual cans, temperature of size box and level of size in size box. Feature of system is new size level controller which operates without any time lag, thus maintaining proper size level regardless of frequency or speed with which slasher is started or stopped.

TACHOMETER—Amthor Testing Instrument Co., Inc., Brooklyn, N. Y. Instrument records machine speeds or production rates, speed changes, starting and stopping time, productive and non-productive periods, and idle time; indicating dial permits operator to keep check on machine speed even if instrument is mounted some distance from the machine.

TELEMETERING SYSTEM—Bristol Co., Waterbury, Conn. Metavane System for recording and automatically controlling temperature, flow, pressure and liquid level. Eliminates hazards where explosive fumes are present; consists of transmitter and receiver, permitting measurements of variables at any point in plant or process, and transmitting measured value pneumatically to a remote central location.

TRANSMISSION SYSTEM—Brown Instrument Co., Philadelphia. Pneumatic system for remote measurements of process variables in atmospheres containing explosive gases. System consists of transmitting instrument and receiver at remote master control board. Features: 1% change in metered value transmitted 200 ft. in less than one second; readings not affected by ordinary vibration at transmitter or receiver; ambient temperature changes of 60° F. affect readings less than ¼ of 1%; operates dependably at sub-zero temperatures.

WEFT-STRAIGHTENING CONTROL—General Electric Co., Schenectady, N. Y. Improved control uses phototubes to control operation of straightening motor on cloth straightening equipment built by Winsor & Jerauld Mfg. Co.; substitutes electrical for manual control; control is sensitive over a wide range of operation; detects very small amounts of skew during tentering process and results in uniformly straight cloth, increased production, and elimination of operator's eye fatigue.

ENGINEERING DEPARTMENT

Its Organization and Functions in a Large Mill

FIG. 1

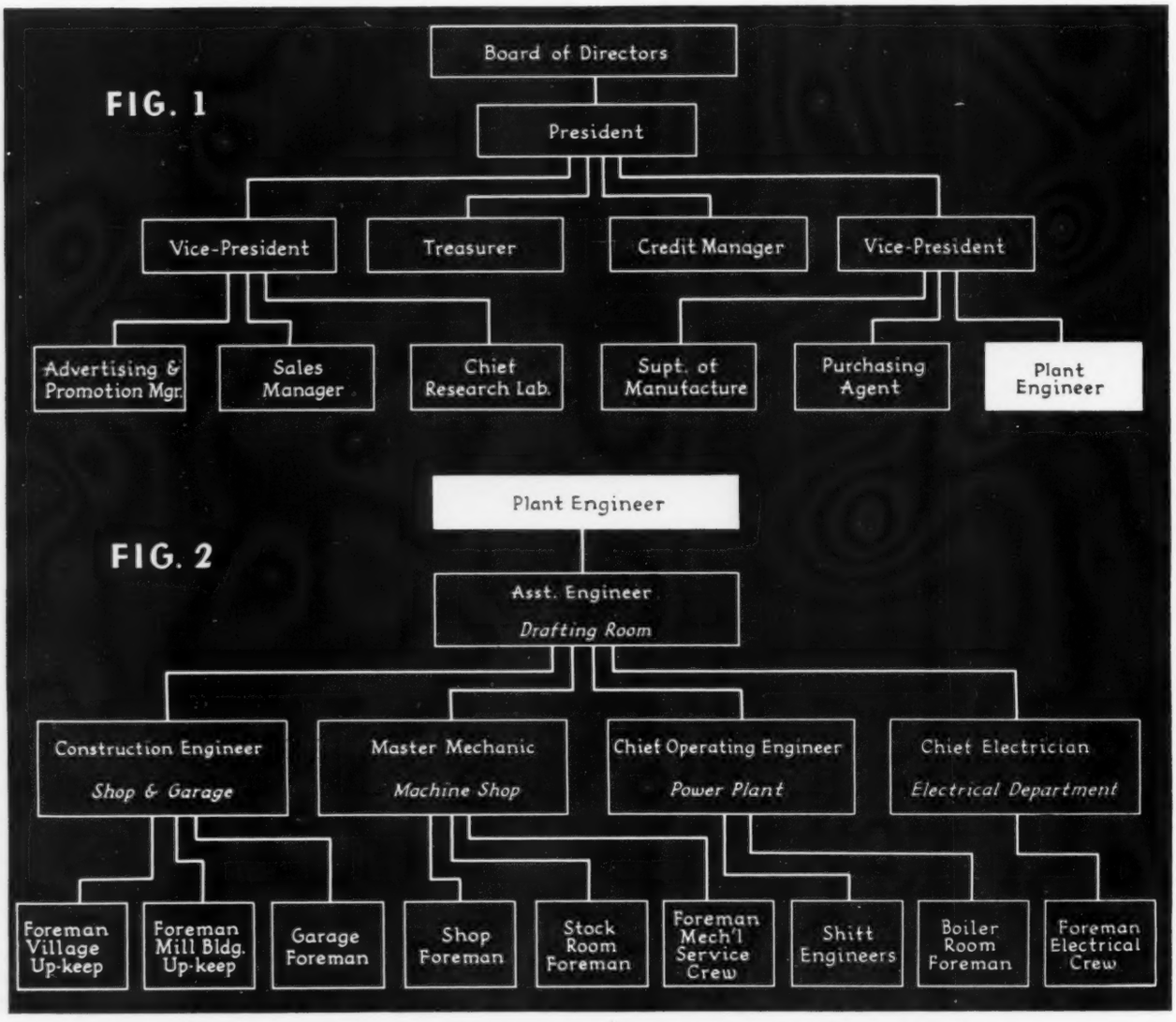


FIG. 2

Fig. 1. Chart showing relation of plant engineer to other mill executives. Fig. 2. Organization of engineering department in textile mill having its own village

IN THE organization of any large textile mill, the plant engineer holds an important place. His responsibilities are many; his opportunities to increase the efficiency of the mill are great. Naturally, the engineering services in any plant must be adapted to the conditions existing in that plant. It is not likely, therefore, that the particular set-up in one particular mill will satisfy exactly the requirements in any other mill. Likewise, the organization in a given plant will have to be modified occasionally on account of the individual abilities of the men in that organization. In preparing this discussion of the organization and functions of the engineering department, the writer consulted the plant engineers of several of the larger mills in the South. From the various organization charts, forms, and ideas supplied by these men has been drawn up a composite picture of what is believed to be the best practices in each of these plants.

For the purpose of this discussion, we shall assume a plant employing about 3,000 persons, having its own village, water system, sewage system and disposal plant, village lighting, and making its own power. Such a community might also have its churches, schools, Y. M. C. A., or social centers. The maintenance of mill buildings and mill village is a considerable construction problem.

The place of the plant engineer in relation to the other mill executives is shown in Fig. 1. The plant engineer reports to the vice-president in charge of production and is required to cooperate closely with other departments, especially with the purchasing department, the research laboratory, the superintendents of production, and occasionally with the sales promotion director. His experience and judgment are of great value to the purchasing agent in arriving at decisions as to quality of products,

and relative cost. His help is also appreciated by the director of the research laboratory on time studies and efficiency investigations.

In Fig. 2 is shown the organization of the engineering department itself. It is good policy to provide an understudy for every key man in an important organization. In building up the organization shown here, this policy is recognized. The plant engineer makes his headquarters in the drafting room, which is under the personal direction of his understudy, the assistant engineer. Routine matters are handled regularly by his assistant and orders issued to the various departments. The personnel of the drafting force varies from time to time, depending on the importance and magnitude of the work on hand. Several extra draftsmen might be required to turn out plans for a new building, or to complete plans for a machinery reorganization. At other times all necessary drawing can be handled by the assistant engineer alone. In addition to design, layout work, plans for building changes, etc., this department checks power bills, meter readings, approves construction invoices, collects data, prepares estimates, and compiles records for future comparison and study. The plant engineer makes requisition on the purchasing department for all equipment of an engineering nature required by the plant and, after delivery, supervises the installation.

Plans submitted by outside engineering firms, covering work of such magnitude that it is not thought advisable to have it handled in the mill's engineering department, are reviewed and checked by the plant engineer and his assistant. Their criticisms and suggestions, based on intimate contact with the plant and knowledge of local conditions, are of great value to the outside engineers.

Another important field of endeavor, and one that sometimes pays the mill handsome dividends is in the development of new equipment and processes. The ideas are worked out in the drafting room, trials are watched and checked, changes are made, and occasionally gratifying results are obtained.

A valuable set of records kept constantly up-to-date in the drafting room shows the constantly growing and changing layouts of piping, including water lines, steam lines, compressed air, and fire protection lines, with connections and valves. A similar set shows electrical connections and lines, with lighting and power circuits.

Four main departments of engineering—civil, mechanical, electrical, and power-plant—are recognized in the four divisions under the plant engineer. These are directed by the construction engineer, the master mechanic, the chief electrician, and the chief operating engineer, respectively.

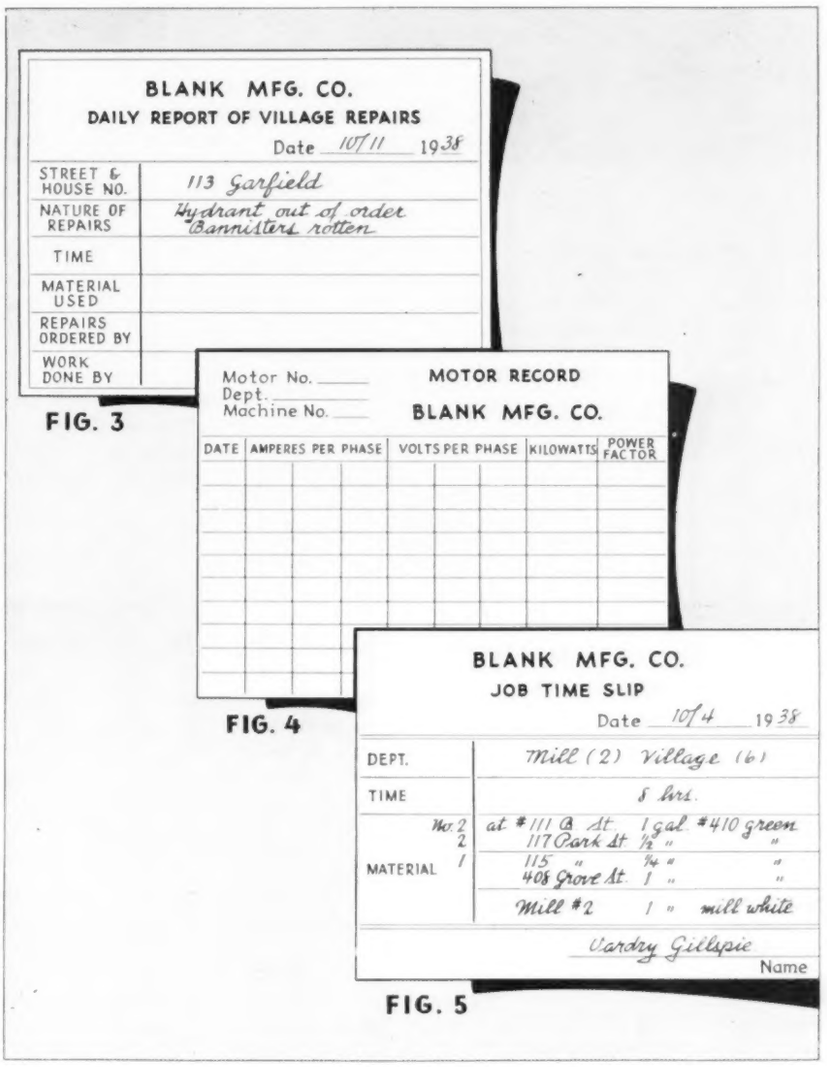
Construction Engineer

The construction engineer makes his headquarters at a combination carpenter shop and garage located outside the mill proper. Working out of the shop are construction gangs of various kinds and varying sizes, according to the work immediately at hand. Painters, plumbers, carpenters, concrete workers, roofers, and sheet metal workers get their daily assignments and directions from this shop. These groups are divided into two main crews—village maintenance, and mill building maintenance. The village crew handles such work as building houses, garages, and stables; laying sidewalks; patching pavements; making new connections to water mains and sewer pipes. It also handles general repair work throughout the village, such as re-roofing, painting, repairing steps, keeping up screens, etc. Under this department also falls the duty of inspection and maintenance of the water system, including the pumping stations, reservoirs, tanks, and filters, and the sewer system, including the treatment and disposal plant.

The mill building maintenance crew includes carpenters, roofers, painters, plumbers. Glazing, which is not a big item, falls to the lot of the painters. Changes in the building of a structural nature, such as the removal or replacement of columns, building partitions, renewing flooring, installing supports for group drives or motors, are all handled by this group.

In addition, there is what might be called a garage crew. Trucks are used to deliver construction materials and equipment, and sometimes workmen as well. These trucks serve also

(*Continued on page 90*)



BLANK MFG. CO.
DAILY REPORT OF VILLAGE REPAIRS
Date 10/11 1938

STREET & HOUSE NO.	113 Garfield
NATURE OF REPAIRS	Hydrant out of order Bannisters rotten
TIME	
MATERIAL USED	
REPAIRS ORDERED BY	
WORK DONE BY	

FIG. 3

Motor No. _____
Dept. _____
Machine No. _____

MOTOR RECORD
BLANK MFG. CO.

DATE	AMPERES PER PHASE				VOLTS PER PHASE				KILOWATTS	POWER FACTOR

FIG. 4

BLANK MFG. CO.
JOB TIME SLIP
Date 10/4 1938

DEPT.		Mill (2) Village (6)
TIME		8 hrs.
MATERIAL	No. 2	at #111 B St. 1 gal. #410 green
	2	117 Park St. ½ " "
	1	115 " ¼ " "
		408 Grove St. 1 " "
		Mill #2 1 " mill white

Vardry Gillespie
Name

FIG. 5

Fig. 3. One of forms used by village up-keep department. Fig. 4. Form used by electricians in carrying out monthly inspection and check-up of motors. Fig. 5. Job time slip used by painters

MASTER MECHANIC

His Duties and Responsibilities in Small or Medium-Size Mill

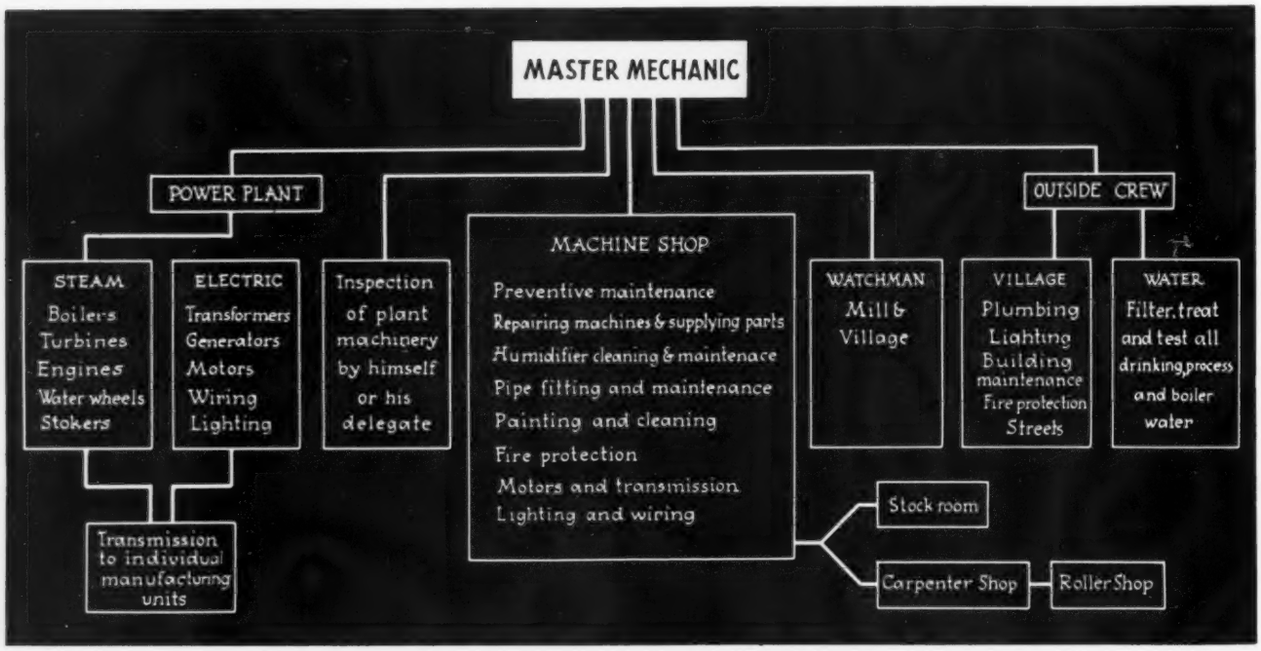


Fig. 1. Organization plan for mechanical department of average small mill

IN AN investigation made by the writer of the duties and responsibilities of the master mechanic in the small or medium-size mill three facts stood out like sore fingers: They are: (1) The duties and responsibilities of the master mechanic in every mill, regardless of size, are greater in number, diversity, and complexity than those of any other overseer. Yet many mills fail to recognize this fact either through special recognition or financial compensation—usually because the mechanical department runs smoothly most of the time. (2) A "small job" is often harder to run than a "large job," because of the great amount of manual work which the master mechanic must do himself. He should have more time to devote to executive administration and planning. (3) In many small plants (and some larger ones) there is considerable wasted motion, due to lack of organization and planning ahead, which may be the fault either of the master mechanic or of management.

The purpose of this article is not to tell the master mechanic how to run his job (as each mill presents its individual problems), but merely to make a few suggestions which may aid him in setting up a more efficient organization.

For the purposes of discussion, let us take a hypothetical mill employing perhaps 500 persons or less and operating a power plant and village. The mill is located in a rural area and must look after its own water supply, fire protection, village maintenance, policing, etc. It is not too well off financially and must watch all expenditures rather closely. However, it is not so hard up that it has to neglect actual necessities. A master mechanic, taking a new job in this plant, is allowed ten men including himself to run the mechanical department on a one-shift basis. If the mill runs two shifts, the situation will be modified accordingly.

Instead of immediately submerging himself in the routine of the new job, our master mechanic should insist on having enough time to get himself oriented before taking actual charge of the shop. He must learn what he has to do and what he has to do it with. A personal inspection of the mill properties and machinery will usually tell him what it will take to keep the wheels turning properly. It is a good idea for him to make notes on this preliminary inspection tour, as the chances are it will be quite a while before he again will have that much leisure.

Next, he should find out what sort of personnel he has inherited and what kind of tools there are to work with. Should either be inferior or lacking for the job in hand, it is better to get the matter straightened out in the beginning. If a master mechanic shows that he can get by with an inferior organization, it is quite likely that he will never get any other kind. In one sense, it is unfortunate that the mechanical department has no irate customers to put the pressure on management for new equipment, as is the case in some production departments. Another important matter in the beginning is to set up a budget to care for normal shop operation, since no one can do a good job based on uncertainties. Finally, the master mechanic must know exactly what responsibilities are his and which overlap other departments. This is particularly vital in order to avoid any possibility of friction through professional jealousy on the part of overseers.

Having a thorough knowledge of his job and his equipment, the master mechanic will do well to work out an organization chart, as illustrated in Fig. 1, which will show him exactly what he has to do and how the work should be delegated. Then, he might work out a job sheet of duties as suggested in Fig. 2. By putting these in black and white, it is easier to see discrepancies and to distribute work more evenly. Also, allied jobs can be assigned to the same person

with less confusion. Such a work sheet obviously would have to be modified to meet local conditions. It might be helpful at times to post this list of duties if there is any doubt in the minds of the men as to what each is expected to do.

Having worked out an organization chart and job allocation sheet, the master mechanic will then find it advisable to partition or fence off a small corner in the shop (if he makes his headquarters there) to accommodate a desk for himself. It is true that he will probably have very little time to use this desk, but he definitely needs some place to keep his records, invoices, time book, and perhaps a drawing board. Furthermore, there might be a few file hooks on the wall for job slips. For example, in one mill recently visited by the writer there is a large board near the master mechanic's desk with the name of each man in the department printed on it. Two hooks follow each name—one in a column marked "unfinished," and the other in a "finished" column. The master mechanic simply writes out a job order for a certain man to handle and then puts it on the first hook.

Suggested Allocation of Duties for Mechanical Personnel in Small Organization on One-Shift Basis

JOB	DUTIES
Master Mechanic	General administration, inspection, mechanical drawing, time keeping, fire protection inspection, and, in general, fills in where needed.
Machinist	Responsible for mechanical transmission, repair of productive machine parts, pipe fitting, and other general mechanical jobs.
Electrician	Responsible for motors, switches, wiring, lighting, etc.
Humidifier Specialist	Cleans and repairs humidifiers. Also responsible for humidifier filter and pumps.
Fireman	Responsible for boiler room, firing, checking gages, keeping coal records, etc.
Engineer	Operates, lubricates, and cleans steam engine or generators. Also responsible for power transmission to manufacturing rooms.
Watchman	Patrols mill and village at night. Clock records kept by master mechanic. May also serve as village constable in case of emergency.
Water Specialist	In charge of water filtering, treating, and pumping. Makes regular water tests or submits samples to laboratory.
Carpenters (2)	Do general carpentry work around mill and village; in charge of painting. Larger jobs let on contract. In charge of roller covering.

Fig. 2

WEEKLY CHECK-UP CHART

	Interval	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Oct. 31
Large motors (15 to 100 hp)-Oiled	2 wk.	A.S.		A.S.		A.S.
Small motors (to 15 hp.)-Oiled	1 wk.	A.S.	A.S.	A.S.	A.S.	A.S.
Cleaners in spinning room-Cleaned	1 wk.	J.L	J.L	J.L	J.L	J.L
Cleaners in spinning room-Greased	2 wk	J.L		J.L		J.L
Elevators-Cleaned & oiled	1 wk.	J.L	J.L	J.L	J.L	J.L
Elevators-Inspected	1 wk.	M.B.	M.B.	M.B.	M.B.	M.B.
Motors in opening room-Oiled	1 wk.	H.E.	H.E.	H.E.	H.E.	H.E.
Fire tank-Filled	1 wk.	M.B.	M.B.	M.B.	M.B	M.B

Fig. 3

MONTHLY CHECK-UP CHART

	Interval	Jan. 3	Feb. 7	Mar. 7	Apr. 4
Spinning frame motors-Greased	6 mos.	A.S.			
Spooler and warper motor-Oiled & greased	3 mos.	A.S.			A.S.
Motors in opening room-Greased	3 mos.	H.E.			H.E.
Fan motors-Oiled & greased	6 mos.	H.E.			
Heater fans-Oiled & greased	6 mos.	E.N.			
Meters in Village-Read	1 mo.	J.C.	J.C.	J.C.	J.C.

Fig. 4

After the job is completed, the assignee writes in the date, materials, and time, and places it on the finished hook. This eliminates looking all over the mill for the man to give him an assignment, and also indicates who is busy and who is not. In the same mill, the master mechanic has in one drawer of his desk a simple alphabetical file, where he keeps job orders, specifications, manufacturers' literature, and anything else which he might refer to from time to time. Often, this file saves a trip to a distant part of a mill merely to look up a machine number.

One of the most important duties of the mechanical department is that of inspection. In the larger plants most of the inspection is allocated to various men in the department. But in the smaller plants there may be no one to whom to allocate this work; therefore the master mechanic looks after it himself. Often there is no set system of inspection, except for the fire-protection equipment, which is required by insurance companies. In one plant the master mechanic has set aside Monday for general inspecting, which he does himself in a very efficient manner. However, if he is away on Monday, another person has to do the inspecting, which means just that much more chance of oversight. A method of preventing oversight was noted in a somewhat larger mill than most of those investigated. In that mill the major routine duties of the mechanical department are

listed on a chart, along with dates of last check-up and date next is due. The man who does the job initials the chart when it has been completed. Somewhat similar charts are shown in Figs. 3 and 4.

The importance of preventive maintenance is illustrated by the following story: A master mechanic affiliated with an efficient and progressive mill visited a brother mechanic in a mill not so wide-awake. The host pointed out a great number of motors waiting to be rewound, and asked his visitor how he handled the problem. The visitor from the progressive mill said, "I have never rewound a motor, because none of mine have ever burned out. Regular inspection and lubrication are all that are necessary."

According to Fig. 1, there are three major responsibilities of the mechanical department; viz., the machine shop, the power plant, and outside work. If the shop is large enough, there may be a foreman for each of these divisions. In addition, there should be a second hand for the entire mechanical department—perhaps the foreman of the machine shop—who can take charge of the work in the absence of the master mechanic. It is not the purpose of this article to go into detail as to how each part of the mechanical department should be operated. However, there are many ways in which even a small organization can be improved with a little thought and effort.

One of the best methods of developing a better organization and at the same time smoothing out the work curve for the individual employee is to insist that each man in the department must know something about the other jobs. For instance, there is no reason why a pipe fitter or machinist should be unable to help repair electric motors in case of an emergency. In one mill with a small organization this problem is overcome by operating what amounts to a vocational school on Saturday mornings. At this time, firemen and watchmen, for example, have a chance to study welding, machine-shop practices, and eventually electrical work, so that when an opening occurs a man already employed in the organization is ready to fill it. A few selected young men from the village are also allowed to take the course and in emergencies serve as helpers. In this particular case, the mill receives assistance from the department of vocational education of the State, and there is no reason why other mills should not enjoy similar privileges.

There are many other ramifications of the master mechanic's job. He may have the responsibility of water filtering and treating, roller covering, the stock room, etc., all of which makes his job just that much more complicated. In one mill with which the writer is familiar he is even chief of the fire department. Yet, he can efficiently handle all of this, and more too, if he will remember one fact: an hour's work with a pencil and paper may save him a day's work with his hands. This is dramatically proved in the case of two mills visited. In the first mill, the master mechanic has not worked on either Saturday or Sunday for nearly three years. In a neighboring mill the master mechanic has not missed working on the weekends during the same period. Since both mills are doing approximately the same job, it is easy to see which mechanical department has the better organization.

ENGINEERING DEPARTMENT

(*Continued from page* 87)

as delivery trucks for coal and wood throughout the village. Trucks operating between different departments of the mill—both motor trucks and electric storage battery trucks and trailers—are operated under this department.

Master Mechanic

The mechanical department functions under the direction of the master mechanic, who makes headquarters at the machine shop. The machine shop foreman is his understudy. Work carried out in the machine shop includes repairing of machines, making of certain machine parts, and assembling and building of special machines. A perpetual record of repairs made to each machine finds numerous uses.

In connection with the machine shop is a stock room where manufactured parts, new machine tools, etc., are kept. In this department is also located the roller covering shop, where rolls are recovered and accumulated for use in the drawing and spinning rooms.

An important group in the mechanical department is the mechanical service crew, which operates throughout the entire plant. A list of its activities includes leveling and aligning shafting; leveling machinery; plumbing spindles; replacing card clothing; replacing belts; repairing machines; and inspecting and cleaning unit heaters, humidifiers, fans, and blowers. The lubrication, cleaning, and inspection of production machinery, however, is a function of the room overseer, who calls in the mechanical service crew for any repairs that may be necessary occasionally.

Operating Engineer

The third main division of work is under the chief operating engineer, who makes his headquarters at the power plant. Boilers, stokers, pumps, turbines, generators, condensers, and spray ponds come under the supervision of the operating engineer.

From the switchboard on to the point of application of power, the chief electrician takes charge. The chief electrician works closely with the chief operating engineer, and his headquarters, the electrical shop, are located near the power plant. He is responsible for uninterrupted and continuous performance of the motors throughout the plant. This means maintenance of transformers, transmission lines, switches, controls, and motors. The electricians inspect, check and oil motors at intervals of six months. Motors are gaged; switch points are examined; power rating is adjusted for new conditions of loading (if there has been a change); and, if necessary a new, or different motor is substituted. At regular intervals all other electrical equipment is inspected and tested. This includes testing the oil in the transformers, as well as making insulation tests from high to low; high to ground; and low to ground. This is done at 6-mos. intervals. With this department also rests the responsibility of keeping the lighting equipment in good order. Lamps are replaced and relocated, and new feeders are run whenever necessary.

Selection of Key Men

The present-day need of economical administration of each department in a large mill necessitates the concentration of authority in the hands of competent men. It is assumed that the plant engineer has so organized his department that he finds time to visit other textile plants and machinery manufacturing concerns with the view of keeping posted as to modern methods and equipment, being assured that his own work will not suffer by reason of his absence. The selection of each key man in the engineering department has been made with the idea of securing the maximum efficiency in his own division, plus the ability to cooperate with the organization as a whole.

Certain forms are vital to the operation of the engineering department, and a few typical ones which have proved particularly valuable in textile mills are shown in Figs. 3, 4, and 5.

SOCIAL IMPLICATIONS of Engineering

Department Parallel Mechanical Value to the Mill

ONE PHASE of the work of the engineering or mechanical department of the average textile mill, which few people stop to consider, is the part played in the general welfare and health of the community. Often the master mechanic himself is not aware of the importance of this aspect of his job. Yet the very lives of hundreds of persons depend daily on the good judgment and conscientiousness of the mechanical staff. It is directly responsible for fire protection, water filtering and treating, sanitation and waste disposal, lighting and electrification, building maintenance, safety devices, and—in some cases—even the ice plant and garage.

Fire Protection

Take fire protection for example. The mechanical department is required to make a weekly inspection of all fire-protection equipment owned by the mill. It is not unusual to find that the mill engineer is also chief of the community fire department.

In some mills the master mechanic sets aside as much as one entire day out of each week, during which he personally inspects fire extinguishers, sprinkler valves, hose, fire buckets, etc. In other mills the master mechanic personally fills the fire tank every week until it runs over. Keeping water equipment, pumps, valves, etc., in good condition is a part of the fire protection program, as well as part of the general maintenance program. One duty which is performed only once a year, yet which might prove disastrous if neglected, is that of letting the water out of the dry-pipe sprinkler system in warehouses in the fall in order to avoid freezing.

Management of the filter and water-treatment plant is nearly always under the direct supervision of the engineering department. While not as dramatic as fire protection, the duties here are really more important to the community, in that the population is daily exposed to any bacteria which might get in the drinking water. Also, the mill equipment will suffer and jobs will be jeopardized if water is not properly treated to prevent corrosion of pipes and machinery.

Sanitation and waste disposal probably rank next to water treatment with reference to the health of the employees. The mechanical department is responsible for all plumbing and sanitation measures in the mill and the village. It is a proved fact that there is less contagious disease in those villages and mills which have a wide-awake engineer who knows the importance of quickly repairing any part of the sanitation system which needs attention. The question of waste disposal is not only important to those persons living in the immediate vicinity, but can also affect the health and happiness of persons living "down the river."

The employees have the master mechanic to thank for the maintenance of comfortable and healthful working conditions in the mill. Heating ventilation, and humidification are his direct responsibilities.

Lighting and electrification also come under the general supervision of the mechanical department. The right kind of engineer can do a great deal toward arranging the mill lighting system so as to insure a minimum of eye strain on the part of the employees. And, if the village lights go out, the first thing one thinks of is to call the master mechanic or electrician. If the mill makes its own power, the problem of keeping lights going during times of fire or flood taxes the ability of the master mechanic. If he neglects the insulation of his electrical system, some one may get a nasty shock or the building may catch fire. Somewhat less important, but still worth taking into consideration, is the fact that all meter readings are left up to the mechanical department. Obviously, the man who does this job must be careful and trustworthy.

The outside crew at most mills comes under the direction of the chief engineer. This means that this department is responsible for maintenance of village houses, streets, and manufacturing properties. It is within the scope of the engineering department to do a great deal toward making the community a better place in which to live, simply through the work of its outside crew along the lines of beautification.

Some of the more isolated communities are forced to operate their own ice plants and garages. It is the engineering department which must guard against breaking down of the ice plant during hot weather. The garage of course has a less important effect on the community life, as its chief function is to keep the mill trucks moving, but it frequently sells gasoline, does repair work for employees, and renders other services to the community.

Safety Work

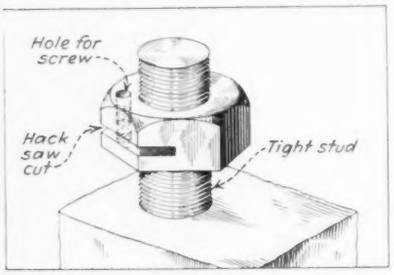
A final responsibility of the chief engineer or master mechanic, which has come into a great deal of prominence in recent years, is the part he plays in the safety of the lives of the workers. In many mills the master mechanic or plant engineer heads up the safety department. In other larger plants, the safety director may be a member of the mechanical department. In addition to organization and training work, the engineering department is at all times engaged in working out new safety devices and machine guards, which will protect the employees while at work. Again, the engineering department must be on the watch at all times for weak machines which might break and hurt some one and for grounds which might cause a shock to the worker. In certain mills, even with highly organized mechanical departments, the master mechanic insists on personally inspecting the elevators regularly, because of his concern for the safety of the workers. Finally, the watchmen who protect the sleeping workers and the deserted mill properties come under the scope of the engineering division. Their quiet contribution to the community welfare is seldom heralded, but vitally necessary.

No attempt has been made merely to list all of the many duties and responsibilities of the chief engineer or master mechanic which directly concern the lives and the welfare of the community; rather the attempt has been to indicate the important part he plays in maintaining cordial relations between the mill and its employees, their families, and the town as a whole.

ENGINEERING KINKS

Removing Tight Studs

A simple method of removing tight studs is illustrated in the accompanying sketch. A hacksaw cut is made



Simple device for removing tight studs

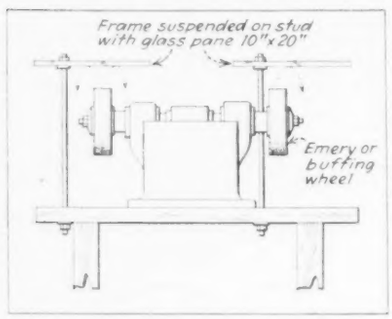
half way through nut *A* at point *B*, following which hole *C* is drilled and tapped to be fitted with a screw. The nut is screwed on the stud, and the screw through *C* is tightened, which pulls the two parts of the nut together in such a manner as to bind it on the stud. Then, it is a simple matter to remove the stud by applying a wrench to the nut.

—W. E. Warner

Grinding-Wheel Guard

Some persons, and rightly so, object to using goggles for grinding or buffing which have been used by other persons. Yet it is difficult to keep every one in the shop supplied with individual goggles. There are certain protective devices on the market designed to protect the man in the shop from flying particles, but unfortunately few mills have installed these as yet. However, it is possible to rig up, with little trouble, a device which will serve the same purpose. This is a frame fitted with a heavy piece of transparent glass, suspended by a steel rod fastened through the base of the emery, grinding, or buffing arbor, stand, or table, and so arranged that it can be swung over the face of the wheel while it is in use. This device if used properly, either with or without goggles, will undoubtedly save the operator from a possible painful eye injury, or perhaps even permanent blindness.

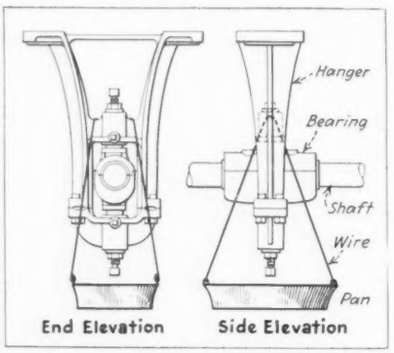
—Frank L. Byrd



Safety device to protect eyes while using emery wheel

Pan to Catch Hanger Drippings

Some time ago, a serious accident happened in a certain plant, which later caused the development of the handy and worth-while kink shown here. A winder walking through the aisle slipped on some hanger oil-drippings, and struck the floor with a resounding crash. As a result of her fall, she was laid up for several months and, needless to say, the very next hour something was done about the oily floor. Small bread pans were purchased at the hardware



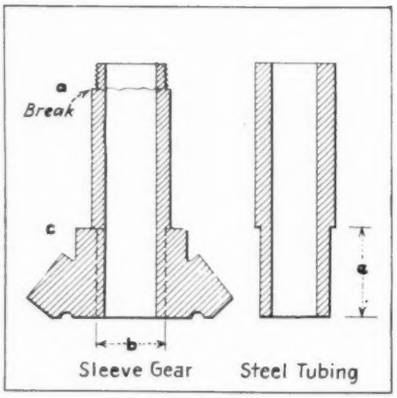
Bread pans suspended from hangers will catch drippings and prevent accidents

store and hung in the manner shown. This eliminated further trouble from dripping oil. The size of pans should be directly proportional to the size of hangers. If pans of the type described are not available, drip pans can be devised from empty 2-gal. oil cans secured from a nearby garage.

—O. L. F.

Redesign May Mean Stronger Part

The average plant machine shop is often capable of substantial economies when its personnel happens to be economy-minded and alert to opportunities. Too often a repair goes no further than simple restoration of a machine part to its original design and dimensions, when the exercise of a bit of ingenuity might result in



Sleeve gear with broken hub can be redesigned

greater strength and durability. New replacement parts may not always be necessary if redesign is considered. There are many cases where a failure occurs at a point in a one-piece part. Yet only the replacement of a portion of the part may be necessary if the part is redesigned as a two-piece part. It may not be amiss, when considering repairs, for one to ask himself, "Can I do anything to make this a stronger and more durable part?" The answer is often found in redesign—which might cost more than a new part of old design, but which makes for profit in later replacements.

For example, gears with extended hubs, or so-called sleeve gears, are not always rendered unfit for further use when bores are worn too far to be bushed, or when hubs break as shown at line *a* in sketch. It may be that the toothed gear body is perfectly good for service. This is possible if a piece of steel tubing is machined off, as at *e* in sketch, and pressed into old gear body which has been bored as at *b* in sketch. The assembled whole is then put into a lathe and machined to original dimensions of the original cast-iron member. Redesign here requires keying the two parts together when fitting. This may be with either the conventional square-type key or the easier installed and cheaper threaded dowels, placed in the joint after the fit is made.

It must not be taken that this form of repair is always cheaper than replacement with a new part, for there are cases where it is not. However, in other cases, it not only provides a stronger and more durable part, but it makes later failures of the weaker member part much less expensive.

—H. H. I.

(Additional Engineering Kinks on page 98)

Teca*

finds a **responsive** public

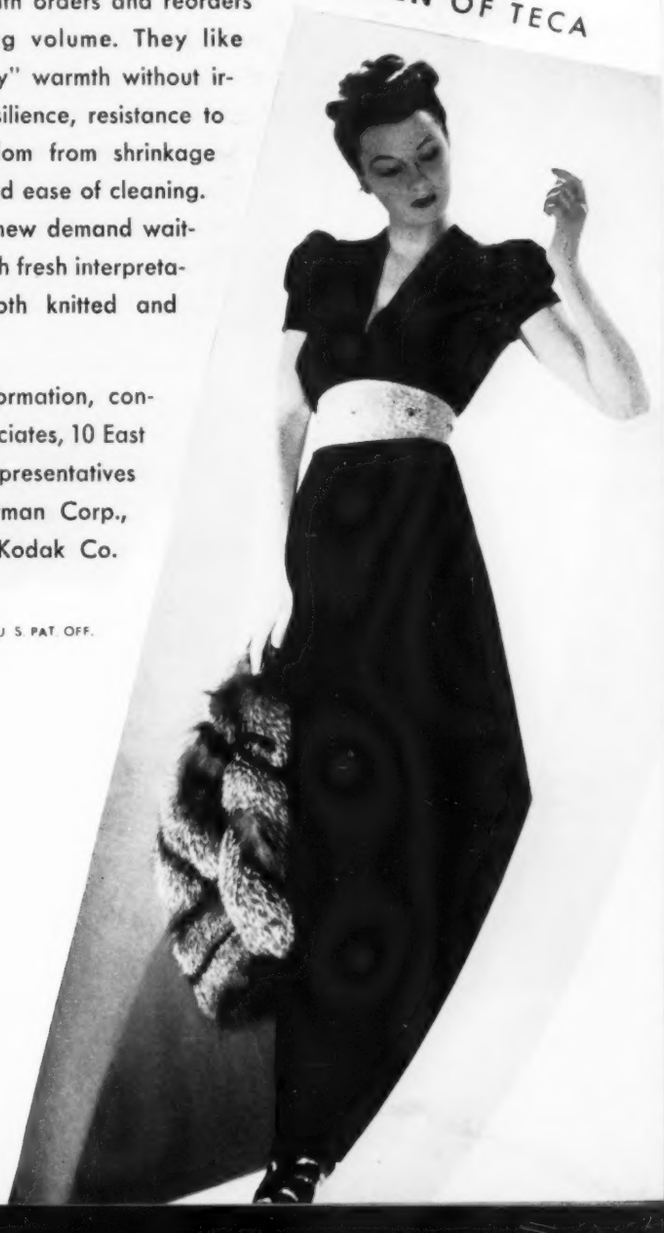
KNITTED OF TECA

To knitters and weavers of high fashion fabrics, Teca, (pronounced *teeka*), Eastman's new crimped spun acetate rayon, is far more than a good "substitute for wool." It is a new Fashion Trend with unlimited possibilities for development. Manufacturers, retailers, and the public alike have been quick to recognize Teca's distinctive merits, and are registering their approval with orders and reorders in increasing volume. They like Teca's "wooly" warmth without irritation, its resilience, resistance to crushing, freedom from shrinkage and sagging, and ease of cleaning. Here is a lively new demand waiting to be filled with fresh interpretations of Teca, both knitted and woven.

. . . For further information, consult A. M. Tenney Associates, 10 East 40th St., N. Y., sales representatives for the Tennessee Eastman Corp., subsidiary of Eastman Kodak Co.

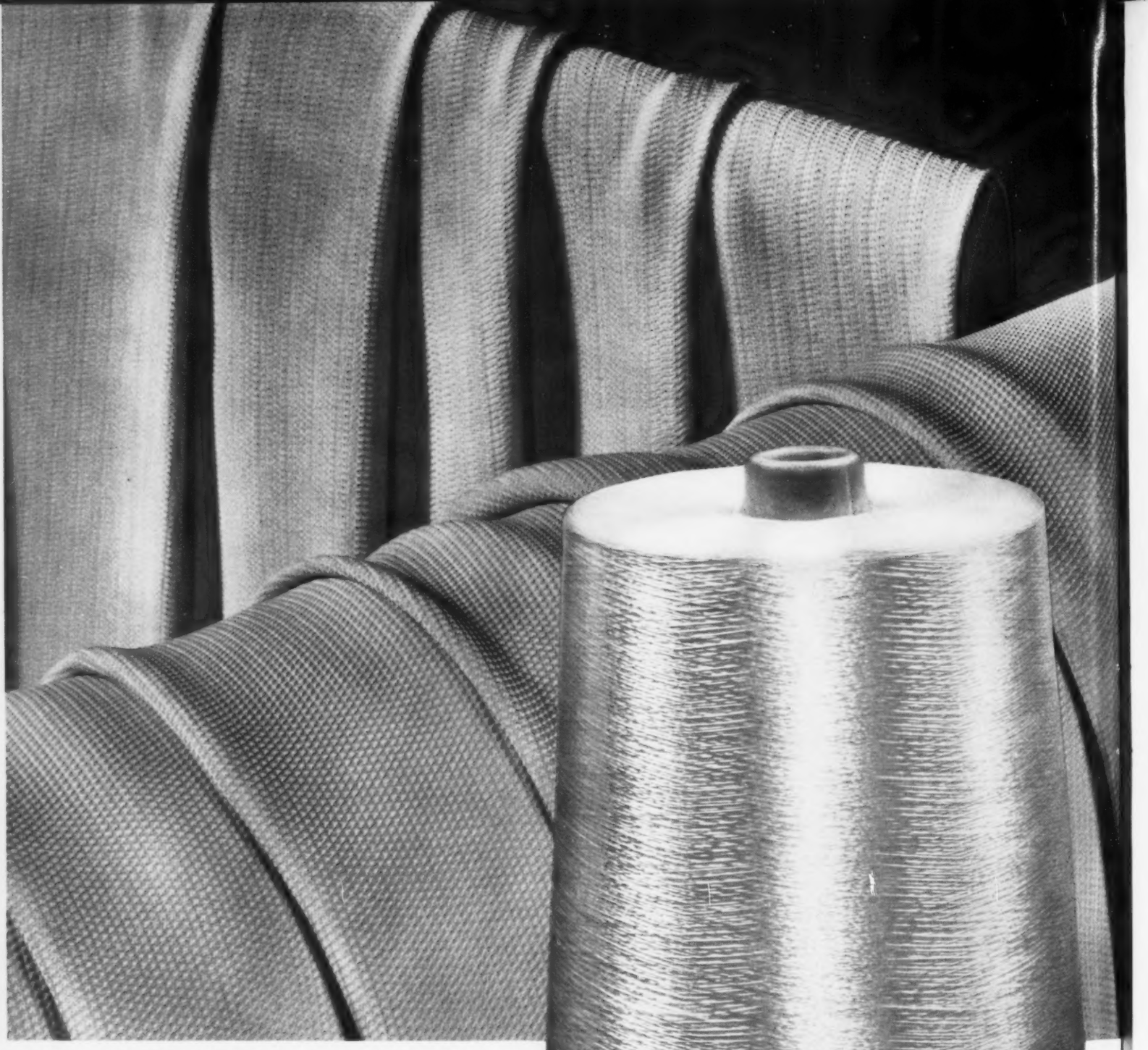
*REG. U. S. PAT. OFF.

WOVEN OF TECA



Eastman

ACETATE RAYON

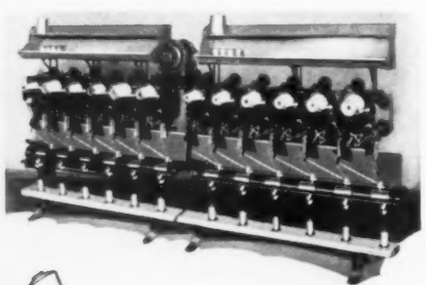


Bright Yellow Matelassé Fabric
Construction 215 x 72

Tan Novelty Crepe Fabric
Construction 215 x 78

The Perfect Fabric

Is Made from Precise Wound Cones



The beautiful finish of rayon yarn which is so vital to perfect fabrics, is preserved and protected by winding on Leesona Winders.

Wherever fabrics are woven or knitted from coned rayon, far more than 90% of all cones are precise-wound Universal Cones.

UNIVERSAL *precise-wound* **CONES** *from* **LEESONA** *precision-built* **WINDERS**

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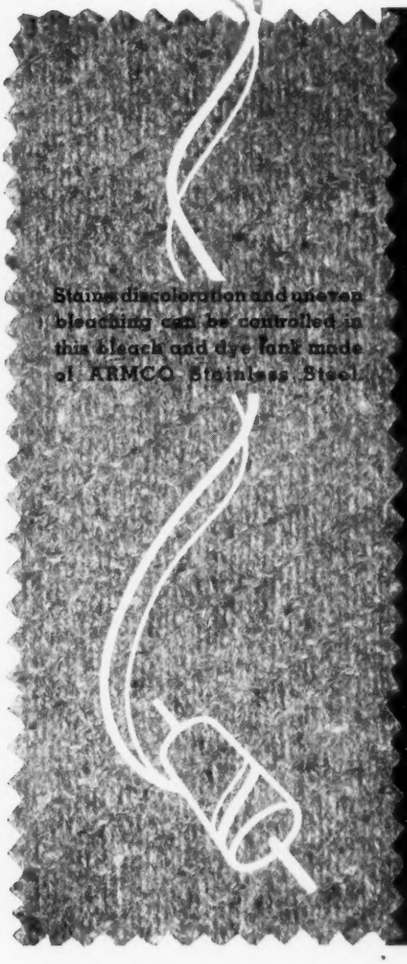
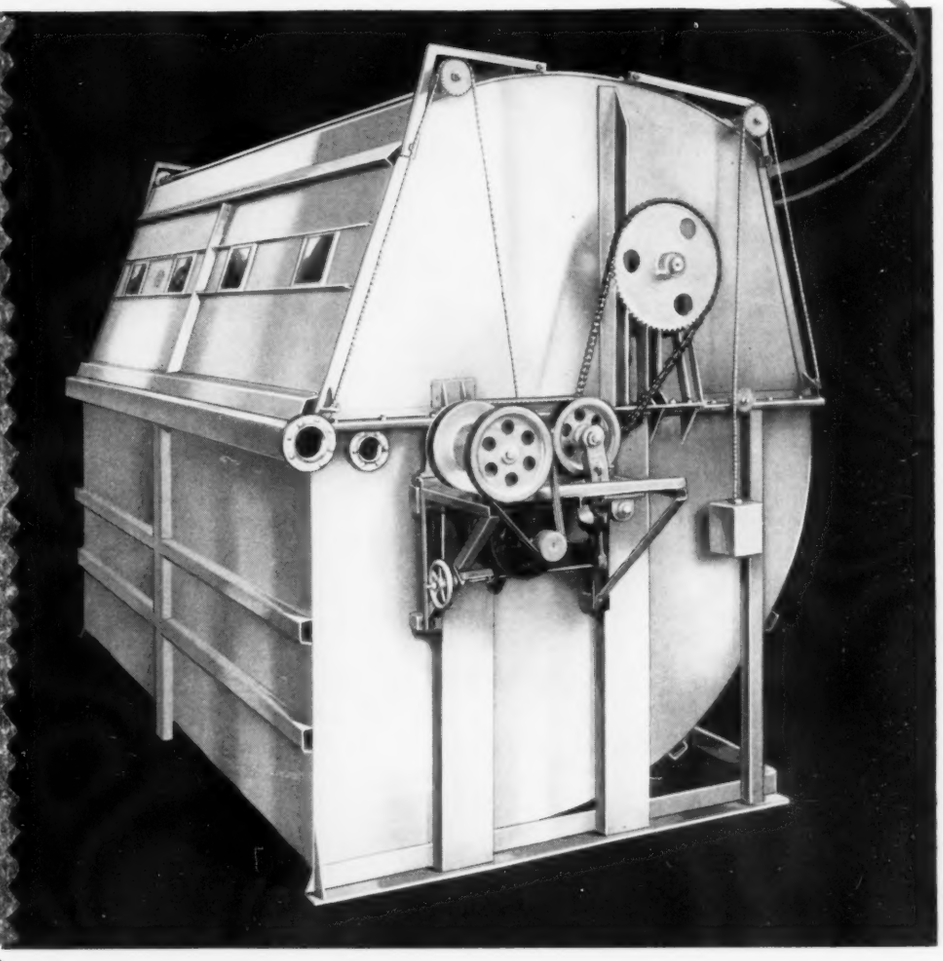
Here's a Good Way

TO CONTROL BLEACHING HAZARDS



Stains discoloration and uneven bleaching can be controlled in this bleach and dye tank made of ARMCO Stainless Steel.



Corrosion, stains, uneven bleaching and premature aging of bleach solutions can be controlled. Woolens as well as silks, rayon and cotton should come through clean and white. You can go a long way toward insuring this with ARMCO Stainless Steel equipment.

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THE OVERSEERS' CORNER

TIME OUT FOR RELAXATION

A Pete and Bill Discussion

"WELL, Bill, it looks like we are in for a tough time," remarked Pete, a few days after the Wage-Hour law went into effect.

"What do you mean, tough time?" asked Bill as they strolled toward the canteen for a quick smoke.

"It's this Wage-Hour law. Probably, it won't affect our department for a long time yet, but I am trying to get the men in the right frame of mind for the ultimate maximum. I am insisting that they pay more attention to their work, and have cut out all rest periods. They don't like it a bit."

"Can't say as I blame 'em," grunted Pete pulling on his pipe. "How would you feel if you couldn't slip out once in a while for a smoke?"

"I agree with you in principle, Bill, but we have got to face facts. If we meet competition, it is imperative that we make every minute count."

"What about the army?" asked Bill. "It seems to me that scientific tests have shown that a man does more efficient work if he is given a few minutes out of every hour for complete relaxation. Wouldn't the same thing apply to the men in your department?"

"Theoretically, yes. But the time study we recently made does not include time out for relaxation. In fact, we are thinking of eliminating the regular lunch hour and requiring that everyone eat only when he is ahead with his work. The idea is that a man does not need the rest today under short operating hours that he did when the day lasted 12 hours. I am afraid that my department will just have to get used to working straight through."

"Okay," said Bill with the suggestion of a twinkle in his eye. "Go on and be a Simon Legree, but I am willing to lay a small wager that my production will be just as high as yours—without curtailing rest privileges in the slightest. And I might add that I'd like to place a side bet that my labor turnover will be much lower than yours. My feeling about this is that what the boys upstairs don't know won't hurt them, as long as production is up to standard."

Under the stress of modern competition, should employees be given time out for relaxation while on the job?

Letters From Readers

Purchasing Agent Here to Stay

("Who Should Do the Buying," Pete & Bill, September, 1938)

Editor, Overseers' Corner:

Many of the old timers will sympathize with Bill's point of view presented in the September issue. They like to meet the traveling men and swap stories with them and occasionally experiment a little in their purchases, sometimes to the disadvantage of the company. But the wheels of progress move on and it is usually for the best whether we like it or not. I have never heard of a mill that once employed a purchasing agent going back to the old way. The superintendent or manager finds it a relief to shift the traveling men to the purchasing agent and quickly realizes that both he and his subordinates can devote their time to more worth while things.

So the best thing for Bill to do is to quit worrying and get down to business. The purchasing agent is here to stay and there is nothing we can do about it.

—W. D. B.
(Virginia)

"No More Secrets"

("Scouts in Other Mills," Pete & Bill, August, 1938)

Editor, Overseers' Corner:

Sending out men to competitors' plants for the purpose of obtaining information is, to me, a very poor policy. What I do believe is that an overseer having difficulties should seek the advice of a competent person who is familiar with the problem he is up against. We are living in a period where good judgment is the chief factor. The days of great secrets are gone. The successful plants do not have to sneak men into other plants to see how they do a certain thing, because their overseers have good judgment, knowledge and common sense.

—F. J. McNeice
(Overseer of Dyeing Broadalbin (N. Y.) Knitting Co.)

Requisites of Good Personnel Director

("Personnel Department," Pete & Bill, July, 1938)

Editor, Overseers' Corner:

To set up a personnel department, the biggest job is to find the right man to put in charge. He must compare favorably with the other high officials of the company and be able to command the respect and confidence of the employees as well as the general public. He must be of judicial temperament, endowed with ability to see and hear both sides of a question without committing himself too much, yet remain sympathetic. He must be gifted with the power to analyze things large and small and with foresight to see and anticipate important things under varying conditions and their possible outcome. He must be able to manage people, sometimes directly, sometimes indirectly. This trait must be combined with aptitude for organizing. He must be energetic and persevering with ability to start things worthwhile. It is assumed the man selected has a good conception of the work at hand, and also that he has

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for without regard to length. We will use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you — contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

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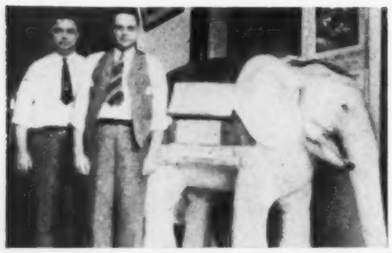
A Safety Drive

EAGLE & PHENIX MILLS, Columbus, Ga., has aroused great interest in accident elimination by acquiring a White Elephant. This proverbial encumbrance is an accurately designed, stuffed and highly ornamental elephant mounted on



The White Elephant no one wants

a truck and is assigned each month to the department having the most "lost-time accidents" during the previous month. The illustration shows H. L. Dillard, superintendent of manufacturing, and E. A. Feimster, superintendent of finishing, standing beside the elephant, which is this month being tended by the general manager.

The card on the side of the elephant reads, "The Accident White Elephant—to be kept for one month in the department having the most lost-time accidents per 1,000 man hours during the previous month. When there are no lost-time accidents during the month, the vice-president and general manager will keep the elephant during the following month."

industrial executive experience and knowledge of all the operations performed in the plant. In any case, he should have enough poise and ability to sit at the council table with other executives and heads of departments and discourse intelligently on the current plant problems. If he has these qualifications, he should be a good personnel director.

—JAMES W. NABORS
(*Scottdale, Ga.*)

Oval- vs. Flat-Wire Reeds

Editor, Overseers' Corner:

A question has come up in our mill, on which I should like to have the opinions of your readers. In a conference regarding methods of improving the weaving condition of a style with which we have been having trouble, one man suggested use of oval-wire reeds, and gave several reasons for his recommendation. Another of our men was just as much against use of reeds of this type.

Among the reasons advanced by the first man were that, although he has had no experience with these reeds, he has heard that they will improve the weaving condition of heavy-sley fabrics. The cross-section of the wires, he pointed out, is oval shaped, so that there is a larger air space between the wires where knots, gouts, and other protrusions first enter the dent opening. This, he believes, will allow any protrusions on the yarn to slip in freely between the wires, without being sheared off. According to this man, it is asserted also that oval wires can be used in such fine reeds that wire 0.009 in. thick can be used.

On the other hand, the second man has offered a number of arguments against use of oval-wire reeds. It is his opinion that the advantage of oval-wire reeds is only theoretical. Such reeds, he states, are not a new development, but were made some 40 years ago. The fact that few mills use reeds with oval wires indicates to him that they have little, if any, merit, as he believes anything that has been on the market for 40 years certainly would be universally used today if it had any real advantage. This second man states that oval reed wires must be about 0.002 in. thicker in the middle than is necessary with flat wire, if the same strength is to be obtained; this means that while the air space at the edges of the dents would be larger with oval wires than with flat wires of equal strength the air space at the center would be 0.002 in. less. Furthermore, he believes it would be practically impossible to make an oval wire of such a thin stock as 0.009 in. without causing the wire to have almost knife edges. Of course, this would wear out the shuttles very rapidly. It is this man's thought that it is not practicable to use oval wire of less than 0.018 in. thickness.

I am still open-minded on the subject of oval vs. flat reed wires, and shall be glad to receive your readers' comments on the question.

MILL SUPERINTENDENT
(*Mass.*)

(*We will be glad to print readers' opinions on this subject. Brevity is desirable.*—Editor.)

Overseers' Practical Helps

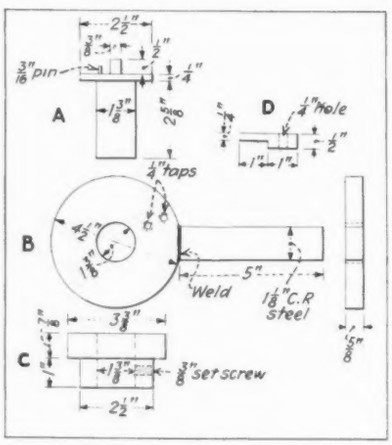
(Additional "Kinks" on page 92)

Wire Hook Bender

A hook bender made from scrap iron is used in the writer's plant to make all wire hooks and weight hooks for spinning frames. The various parts are turned out from scrap, as illustrated in the diagram, and assembled as follows:

Fit *A* into 1⅜-in. hole in *B*. Slip *C* on shaft of *A* under *B*. Put *D* on *B* where hole is tapped out. Then you have a complete wire bender. Catch the bottom of *C* in a vise, put wire on top of *A* between the 3/16-in. pin and ⅜-in. stud, then turn handle of *B*. Any type of hook desired can thus be formed with a minimum of effort.

—F. W. LOWE



Disassembled wire hook bender

Card Grinding Fillet Holder

Quite frequently in my experience I have found card grinders faced with the need of something to hold emery fillet when trying to mount it on traverse and drum grinders. Often they resort to getting someone to put a broom handle through the roll and hold it until they complete the job of covering the grinders. Others drive a screwdriver or punch into the floor and hold the roll thus.

To meet this situation and to avoid the floor's being damaged (or requiring an extra man), I made a simple holder that fits the front rod of the card, extending from the side to the bottom calender roll of the delivery to the coilers. This device fits several types of cards, and by use of strap hooks, works well on other makes.

Fig. 1 shows the device suspended from the boiler-rod pipe, and in Fig. 2 an end view shows an opening of 2 in. that will hold either a drum fillet or a traverse-roll fillet during use Fig. 3 shows a side view that will probably clear the whole matter. The extremity of length is 21 in., with a

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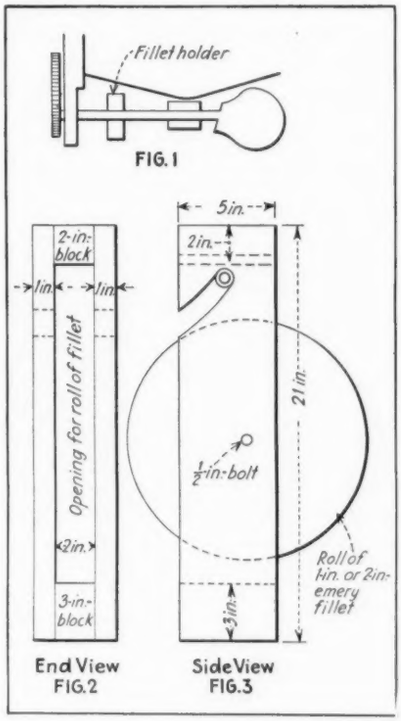


Details of card-grinding-fillet holder

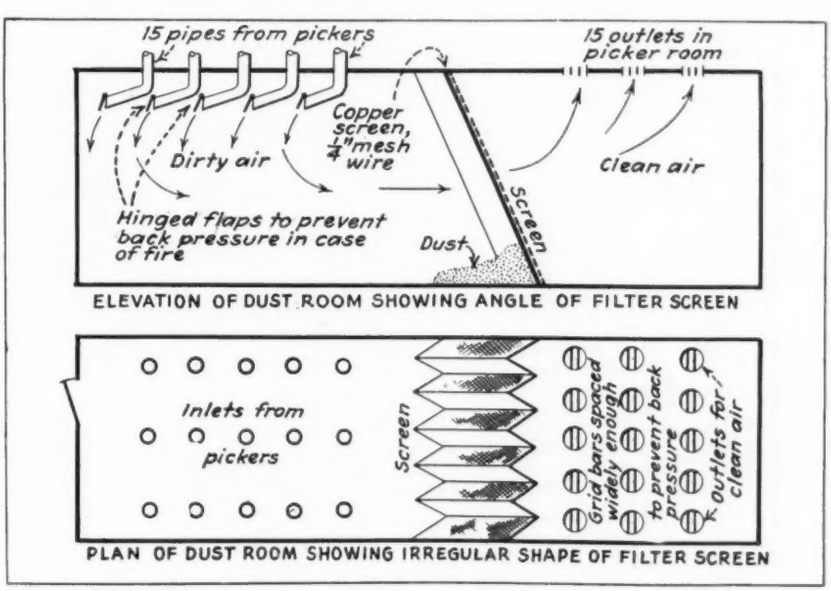
2-in. block at the top to divide or hold together the sides, and a 3-in. block at the bottom to strengthen the whole device. This gives a clear opening for a 13-in. roll of fillet. For supporting the emery in the middle, an ordinary ½-in. carriage bolt is sufficient.

With this holder there is no waste of emery from breakage or from having to be cut long when being attached to the traverse grinder. Where I was getting 14 to 15 coverings from a roll of fillet, I am now getting 16 and occasionally 17.

F. L. B.

Dust Room Filter

The problem of filtering dust from air in the picker room was solved recently by a large southern mill in a rather unique manner. This was partly due to the fact that the dust room is under the picker room proper, but the same method could be used in connection with any conveniently located dust room. The dirty air from the pickers is forced into a settling room through the regular pipes, which are equipped with flaps to prevent back pressure in case of fire. The air is then required to pass through a filter made of 1,000 sq.ft. of 36-mesh copper screen backed by ¼-in. galvanized wire to give it strength. The filter divides the dust room completely in half and is set at such an angle that when it is struck, the dust will fall off onto the floor. Also, it will be noted from the top view of the room that the filter is built in a shape similar to that of the old-fashioned rail fence for the purpose of giving additional surface. Outlet holes on the other side of the picker room are 14 in. in diameter and covered with grid bars about ¼ in. apart. The arrangement is inexpesive and can be easily made by any ordinary mill shop. And it might be mentioned in passing that the dust room is opened for cleaning only once a week. —W. A. G.


15 pipes from pickers
15 outlets in picker room
Copper screen, 1" mesh 4" wire
Dirty air
Clean air
Hinged flaps to prevent back pressure in case of fire
Dust
Screen
ELEVATION OF DUST ROOM SHOWING ANGLE OF FILTER SCREEN
Inlets from pickers
Screen
Grid bars spaced widely enough to prevent back pressure
Outlets for clean air
PLAN OF DUST ROOM SHOWING IRREGULAR SHAPE OF FILTER SCREEN

Dust-room filter

The Youngest Super?

NOT LONG ago TEXTILE WORLD published a story about the oldest cloth-room overseer we have met. This time we are presenting one, who, we believe, is the youngest cotton-mill superintendent in the industry—Woodbury

W. K. Dana

(Woody) K. Dana, aged 26. And it might be mentioned here that the mill he manages, Laurens (S. C.) Cotton Mills, is listed at 48,240 spindles and 1,324 looms on fancy goods, a man-sized job in anybody's language.

It was rather natural that Mr. Dana should decide to go into the textile business, as his father is a textile man and his father before him. He got his first experience poking about their mill. After two years at Bowdoin College, Mr. Dana went to work for the Haskell Silk Mills, and later for the Westbrook Weaving Co., both in Westbrook, Me., and both now defunct. After leaving the latter, he spent a year at the Philadelphia Textile School. From there he migrated southward to Judson Mills, Greenville, S. C., where he worked through the plant for several years. His final move was to Laurens Cotton Mills where he has been superintendent for the last year and a half—which means that he took the job at less than 25 years of age.

A walk through Laurens Cotton Mills will show that Mr. Dana has an inquiring mind with a definite mechanical bent. Tests of all types are continuously being run, and here and there will be noted unique mechanical devices for increasing efficiency which were developed from ideas brought up usually by someone in the department. This interest in mechanics does not stop with the mill; he drives a ramshackle Ford which requires constant attention and at the present time is tinkering with and flying a Taylor Craft plane. He likes to fish too, and has caught bass weighing from 2 to 4 lb. out of the mill pond which can be seen behind his office. Mr. Dana is a bachelor.

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Questions and Answers

Holes in Knit Goods

Technical Editor:

We are manufacturing hosiery yarn and have been selling 24/1 and 30/1 yarn for the underwear trade. One of our clients reports to us of having trouble in using the yarn, as it causes quite a lot of holes in the fabric. We have unraveled part of the samples sent to us, and found that the yarn is broken right at the hole, but that it goes on knitting. As all of the machines (twelve-carrier type) have stop motions, we do not understand what is causing this defect. We are interested in knowing if these holes are due to some defect of the knitting machines or to the yarn. We shall appreciate your advice as to the cause of the defect and the measures needed to correct it. For your examination we are sending you under separate cover samples of plain and ribbed fabric. (8581)

The yarn used in these fabrics is of poor quality, having a great many slubs that pull apart when being knitted. The stitches in these samples are a great deal too tight, thereby causing a great deal of strain on the yarn. Most of these holes can be stopped by knitting a looser stitch.

Resist Spots in Dyed Fabric

Technical Editor:

Will you kindly examine the inclosed swatch and let me have your opinion as to the cause of the small white spots marked? The material was dyed with a mixture of pink and orange direct dyes on a padder. The material was singed, kier boiled, bleached, mercerized, and scoured before dyeing. The undyed goods, when padded, were neutral in reaction having a pH of 7. (574)

It is our opinion that during processing of this piece of cloth some material has been spattered on the fabric, acting as a resist and preventing the cloth from taking the dye at this point. The spot apparently wets out and absorbs water at the same rate as the balance of the fabric. However, when this fabric is wet, the white spot seems to have a definite pucker, showing that in wetting out it does not contract as much as the balance of the cloth.

Boiling a piece of the spotted cloth in a concentrated salt solution for over ½ hr. failed to boil virtually any color onto the white spot; although, it did affect the shade of the fabric. The spot is too small to permit the exact cause of the resist to be determined.

Twits in Woolen Roping

Technical Editor:

I am enclosing two samples of roping, with which I have been having trouble due to thin places or twits. My cards are 60x48 in., taking off 60 good ends. Cylinder speed is 68 r.p.m.; ring doffers, 8¼ r.p.m.; finisher fancy, 450 r.p.m. Our blend is composed of 50 per cent picked jerseys, 20 per cent garnetted seamers, and 30 per cent wool of about four different grades.

I have experimented with fancies and they do better work at about this speed and set about 1/16 in. or more in cylinder wire. If I raise the fancies off, the yarn is weakened. Wipe rolls are not stretching the web or nipping it. Neither is it drawing too much between aprons. I have checked all details and tried everything I know. Do you think more cylinder speed would help?

My rings are not in the best condition. The wire is loose in the foundation, or rather the foundation has stretched and the rings are spongy, and I can't set the rings as close to the cylinder as I would like on account of the wire tipping back and facing it. I blame the trouble on the rings. I will appreciate any information you can give me. (8477)

We are of the opinion that you have answered your own question, in that you state that the ring foundations are spongy. This condition tends to alter the pitch of the wire at the point of contact on the cylinder, making it difficult for the points of the doffer wire to hold the stock as they should.

Excessive doffer or worker speed would also cause twitty roping, but we judge from the tone of your inquiry that if such were the case, you would no doubt have rectified it. The roving appears to be well carded and the blend is such that twits would not arise from that source.

What Size Filling Bobbin?

Technical Editor:

How large should the diameter of filling bobbins be, in order to have them run well in shuttles of 1 7/16 in. inside width and 1 11/32 in. height? (8544)

A shuttle with 1 7/16 in. inside width and 1 11/32 in. high should not be forced to take a larger bobbin than 1 5/16 in. diameter. The reason for this is that allowances must be made for variation in bobbin size, slightly crooked bobbin rings, slightly loose and/or crooked heel springs, and a certain amount of vibration. Also, when a shuttle enters the shuttle-box and comes under pressure from the binder, the side walls of the shuttle will be forced together slightly. Therefore, it is necessary to have 1/16 in. clearance between the side walls of the shuttle and the bobbin. If less clearance is allowed, some bobbins are likely to be too large for the shuttles, since no spinning department can make all bobbins with exactly the same diameter. The probable results of such a condition are a great number of broken picks, nicky selvages, and selvage thread breakouts.

Bristles in the shuttles, if correctly applied, do not cause any more trouble with large bobbins than with small. The bristles should be put in at an angle of about 35 deg., and located so that they will rest on the bare bobbin tip, not on the filling.

The sharp angle of the bristles is necessary to allow the filling to bring them up on top of the bobbin after filling change. The bristles should not extend over the bobbin, as the filling is likely to loop around them and break. Bristles should be trimmed so that they extend to the center of the bobbin, but should not spread to either side of the axis of the bobbin.

Shiny Picks in Satin

Technical Editor:

Question & Answer 8494, in your June issue, relates to causes of trouble with shiny picks in a 5-harness satin cloth. It is possible I may be able to suggest some further causes of this trouble.

On weaves of this type, the filling hangs very slack, there being four ends of warp up for each end that is down. This gives rise to a tendency for the filling stop-motion frequently to stop the loom falsely, since it does not require much pressure to carry a filling thread down into the slot, thus stopping a machine even though the pick is not broken. If a loom has been stopped falsely by the filling stop motion, and the weaver starts the loom without first tightening up the last pick in the shed, a shiner will be caused.

The remedy for a condition like

THE OVERSEERS' CORNER

this is to adjust the stop motion to the special requirements of the weave. In the first place, all possible feeler wires should be in when 5-harness satins are being woven. Also, feeler wires should be set so they come down as early as possible, as this will cause the wires to catch on to the filling near the extreme end of the feeler wire, thus reducing the amount of pressure the wires have on the filling. Further, it is wise to reduce the spring pressure of the feeler wires as much as possible, so they will not have so great a tendency to carry the pick in the shed down into the slot.

Shiny picks have become so numerous on cloth of this type that, in some instances, the fabric is woven face down; that is, four down, one up, instead of four up, one down. There are two points to be gained by weaving face down: first, if there are any shiners, the weaver can see them as he is weaving—this is impossible if the cloth is woven face up; second, the filling is held up out of the feeler wire slot much more when there are four warp threads down to each one that is up.

Sometimes weavers make ridges on the under side of feeler wires to prevent false stops. This is not necessary and should not be allowed, as it is another cause of shiners.

BENJAMIN F. HAYES
(Mass.)

Analysis of Knitted Fabrics

Simplified by use of handy raveling board

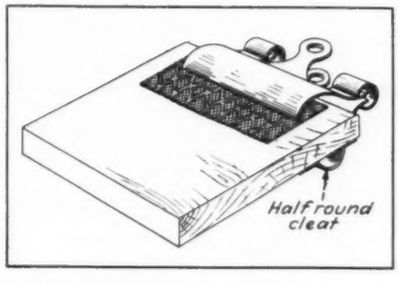
By J. F. CAHILL

IN preparing a sample for analysis by raveling, one can regard as being in the same category fabrics knit on cylinder and dial pattern-wheel machines, pattern-wheel spring-needle rib machines, and latch-needle jacquard machines, since all are "welt-back" fabrics. Fabrics knit on loop-wheel spring-needle machines and on pattern-wheel latch-needle (open cylinder) machines can be considered as being in another category. If the two latter machines were knitting the same design, the appearance of both face and back would be identical, even though on the loop-wheel spring-needle machine the fabric moves upward with the face on the inside of the tube, and on the pattern-wheel latch-needle machine the fabric moves downward with the face on the outside of the tube.

Although the stitches of a fabric knit on the loop-wheel spring-needle machine are in a convenient position for raveling, it would be rather confusing to ravel and check them from the back of the fabric. Therefore the writer prefers to do the raveling with the face of the fabric up and the design in full view. A raveling board such as that shown in the accompanying illustration affords a convenient means of holding the fabric.

The board is about $\frac{3}{8}$ in. thick and has the top edge rounded off. The rounded edge can be filled with a good paint filler and polished, or it can be covered with a metal strip lapped over about $\frac{1}{2}$ or $\frac{3}{4}$ in. on each side and held down with small tacks. If metal is used, care should be taken to see that all rough edges are smoothed down. Spring clips of the kind shown can be obtained at any office-supply or stationery store. They can be obtained in widths as wide as 6 in.; however, the writer usually uses two clips, each 3 in. wide, when working on wide samples. With these removable clips, any reasonable length of sample can be used. Both the sample and the clips are held clear of the table, and the board is held in a slanting position for convenience in working by putting a cleat of half-round molding near the clip end of the board.

To use the raveling board take a sample of fabric embracing two or more horizontal repeats and several vertical repeats and mark one wale near each side of the sample so that it can be distinctly seen. The marked wales need not be both on the same portion of the figure, as they are useful simply as guides in making a record of the pattern on design paper. Lay the sample, face up, over the rounded edge of the board and snap on the clip or clips so that about an inch of the fabric is left exposed for convenient raveling. As the raveled edge nears the jaws of the clips, the clips should be loosened and more fabric drawn down for raveling.



Raveling board with spring clip.

Rule off a column of squares, between two lines, near one side of a piece of design paper—the left side if the raveling is to be done from right to left, or the right side if the raveling is to proceed from left to right. The recording of the design on design paper should always be done in a direction opposite to that in which the raveling is done. Then the record shows in reverse order and in the position from which a presser diagram must be taken off or a pattern-wheel setting laid out; in fact, it appears as the design would be seen from the outside on a loop-wheel machine in operation.

If the one who does the raveling also makes the record on the design paper, it is necessary for him to take his eyes off the raveling while he makes the record. This is likely to result in an error. Especially in the case of complicated designs, it is better for one person to do the raveling under a reading glass and call out the stitches and floats, while another does the recording on the design paper. A dot should be used for a knit stitch and a cross for a float. With two working, raveling from right to left and recording from left to right, the record should begin at the bottom and proceed upward, course for course (ignoring plain courses), with the first mark in the ruled column of squares to correspond with the knit stitch or float in the marked wale at the right side of the sample. When the marked wale at the left side of the sample is reached, another vertical column of squares can be ruled on the design paper and will serve as an excellent check against error. When the recording is completed in dots and crosses, the dotted squares can be filled in, and the complete design will show in reverse order just as the knit stitches and floats should appear on the outside of a loop-wheel spring-needle machine in operation.

LOOMFIXERS' MANUAL

Cotton Section—*Chapter V*

By IVAR MOBERG

Harness Motions

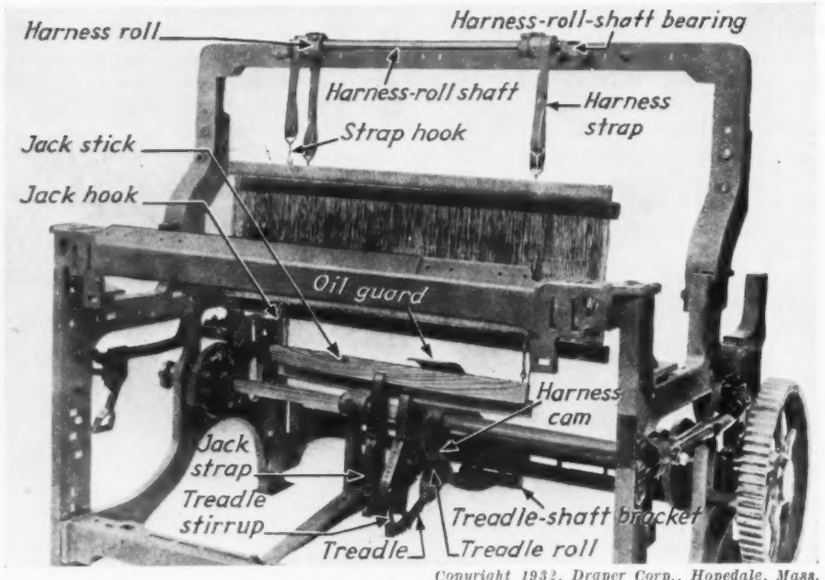
THERE ARE six common types of motions used to raise and/or lower harnesses in conformity with a given weaving plan. These are: cone motion, under-cam motion, side-cam motion, dobby, head motion, and jacquard motion.

The first of these, the cone motion, is now almost entirely obsolete, after a relatively short period of use. The reason for this is found in its limited use, since it permits of the weaving of plain fabrics only. Today the tendency is to purchase looms with as much flexibility as possible; therefore it is considered unnecessary to include a description of this motion.

The most universally used of harness motions is the under-cam motion. This is likewise one of the most ideal motions since it is, in most instances, positive in action. Ordinarily it has a capacity of six harnesses and six picks, which makes it flexible enough for most basic weaves. The motion is positive when equipped with a top roll or Lacey top, and semi-positive when equipped with a spring top. In other words, with a top roll or Lacey top, one harness must come up as another harness is pulled down. With a spring top the downward movement, which is forced by direct cam action, is positive, while the upward movement is not positive, being actuated by the spring tension against which the harnesses have been depressed. Any interference with free movement of harnesses may cause mispicks, due to failure of the springs to lift harnesses at the proper time.

Under-Cam Motion

Fig. C36 shows a Draper under-cam arrangement in connection with a top roll. In this case, the cams are attached directly to the bottom shaft and can produce plain weave only. Usually, such cams are cast two in a set, and, in order to obtain the same size shed from each cam, that operating the front harness is smaller than that operating the back harness. In order to make it possible to lift the back harness a greater distance than the front harness is depressed (in one shed), and to depress the back harness a greater distance than the front harness is lifted (in the other shed),



Copyright 1932, Draper Corp., Hopedale, Mass.

Fig. C36. Draper under-cam loom, with top roll

it is necessary that the top roll operating the front harness have a smaller diameter than that operating the back harness. For instance, if the cam operating the front harness has a throw of 3 in. and the cam operating the back harness has a throw of 3¼ in., the difference in the diameters of the top rolls must be such that as the front harness is depressed 3 in. the back harness will be lifted 3¼ in. in order to keep the treadle roll in contact with the cam at all times. Similarly, when the back harness is depressed 3¼ in. by its cam the front harness must be raised only 3 in. It is obvious that the smaller diameter top roll must always be connected to the front harness and the larger roll to the back harness.

The setting and adjustment of this motion involves the following steps:

1. Turn the crankshaft to whatever position is desired, between bottom and front center, and turn the cams so that the treadles become even in height; tighten the setscrews in this position. The point of the crankshaft at which the treadles should be even depends upon the type of fabric being woven—what is known as "early" shedding indicates that the harness cams are so timed that treadles are even at bottom center of the crankshaft; if the treadles are even at or near front center, the shedding is called "late"; halfway between bottom and front center is termed "medium" shedding. If two sets of cams operate on the same harnesses, as in wide looms, all four treadles must be even. Turn the loom over one pick and see that the treadles are even on the opposite side of the cams as well as on the side on which they were set.

2. Hang the harnesses from the top roll by means of harness straps, taking care that the harnesses are somewhat lower than their normal position, in order to facilitate hooking up of the jack hooks underneath.

3. Apply tension on the warp and turn the loom to back center. Adjust all harnesses in the bottom shed, making sure the warp threads are well down on the race plate. Turn the loom over one pick, so as to lower the remaining harnesses into the bottom shed, and adjust them similarly.

4. Turn the loom until all harnesses are level and then tighten the harness straps until the treadle rolls come in contact with the harness cams. It is essential to good weaving that the treadle rolls remain in contact with the cams at all times.

5. Turn the loom again into both open sheds and make sure straps do not run up on the heads of the screws with which they are fastened to the top roll. If, for instance, the front straps run up on the screw heads at fully open shed, lengthen the back

straps and take up a like amount on the front straps. This will turn the top roll to such an extent that the straps will not run on their screws. Reverse the adjustment if back straps run up on their screws. Fig. C37 illustrates this point.

Auxiliary Camshafts

When a weave other than plain is to be produced, an auxiliary camshaft must be used. Fig. C38 shows a Draper harness motion with camshaft. This is the most universally used motion and is, for certain types of fabrics, the most practical.

The auxiliary camshaft is located in back of the bottom shaft and is gear-driven from it. The capacity of this harness motion usually does not exceed 6 harnesses and 6 picks. The illustration shows the harness motion with a single drive which is good for up to and including 6 picks. For 7 and 8 picks a compound drive must be used, in order to obtain the required reduction in speed. Generally, each cam is cast separately and held in the desired relative position to the other cams by notches and lugs on the cam hub; the cams are tightly pressed together by means of a screw and nut arrangement at one end of the shaft.

Notches, on one side of each cam hub, correspond to the number of throws or picks, to the revolution. Thus, a 3-throw cam will have three notches, a 4-throw cam four notches, etc. Engaging any one of these notches is a single lug on the opposite side of the cam hub. By changing the relative positions of the cam, one can produce different weaves, within certain limitations. Thus, for instance, a set of 4-harness-twill cams can be arranged to produce a 4-harness crowfoot weave, and a set of 5-harness-twill cams can be arranged to produce a 5-harness satin weave.

Some loomfixers have the misconception that a 2-pick cam can be used as a 4-pick cam merely by cutting its speed in half. While it might be possible to make such an arrangement run, it would be very undesirable and should not be permitted. The reason for this is that the change portion of a 2-pick cam is too slow to allow its being used as a 4-pick cam; such use makes the harness start dangerously early for the change but completes the change quite tardily. The risk of skips in the cloth is therefore very great. Similarly impractical is to use a plain weave, 2-pick cam for a 2x2 basket or a two-pick-in-shed weave.

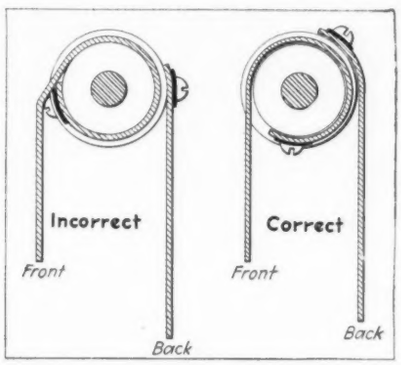


Fig. C37. Correct and incorrect adjustments of harness straps on top roll

Lacey Top Motion

Fig. C39 is a diagram of the parts in a Lacey top motion. This motion is probably the most ingenious of all such arrangements. Unfortunately, its scope is limited to weaves in which the same number of harnesses are up and down on every pick. The Lacey motion dispenses with springs against the resistance of which harnesses must be forced down. It also makes the under-cam motion positive in action, as one harness must rise for every one depressed by the cams. Its setting is, however, rather difficult for those who are not familiar with the procedure.

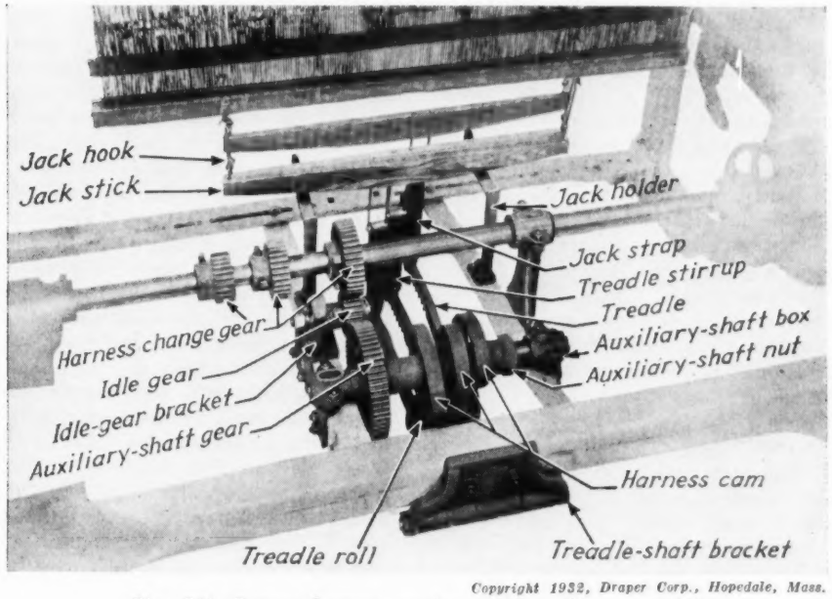
Setting Lacey Motion

When setting for plain weave, whether made by 2, 4, or 6 harnesses, first lock all levers so they will not move. This is accomplished by pushing the roll lever and segment lever studs far enough into their bearings that the lugs on the levers engage the notches in the bearings. Tighten the setscrews in this position. It is now necessary only to adjust the straps, as previously described.

For 3-harness twill, unlock segment lever (*D*) by withdrawing the segment-lever stud from its bearing until the lug becomes disengaged from the notch and the lever is free to swing on its pivot. Attach the strap for the first harness to the small-diameter section of harness roll (*A*) on the lower segment-harness-roll stud, and the strap for the second harness to the large-diameter section of the same roll. Attach the strap for the third harness to segment lever (*D*). With the first and third harnesses meeting at the center of the change, adjust the straps so that the segment lever is in vertical position. Then turn the loom over to check the balance of the segment lever. When it is perfectly balanced, it should be moved an equal distance to each side of an imaginary vertical line drawn through the center of the segment-lever stud. Also, check the balance of the harness roll to make sure the straps do not run up on their respective screw heads. If any do, adjust as previously described.

For 4-harness twill or crowfoot weave, use either harness rolls (*A*) and (*B*) on the segment-harness-roll studs, with segment lever (*D*) free and harness-roll lever (*E*) locked; or harness rolls (*C*) and (*A*) on the harness-roll-lever stud and the lower segment-harness-roll stud, with harness-roll lever (*E*) free and segment lever (*D*) locked. With the first and fourth harnesses meeting at the center of the change, adjust the straps so that the levers are in vertical position.

For 5-harness twill use harness roll (*A*) on the lower segment-harness-roll stud for the first and second harnesses, segment lever (*D*) for the third harness, and harness roll (*C*) on the harness-roll-lever stud for the fourth and fifth harnesses. With both levers free to swing on their respective pivots, turn the loom until the third and fourth harnesses meet in the center of the change. Then adjust the straps, with the loom in this position, so that both levers are vertical. Now

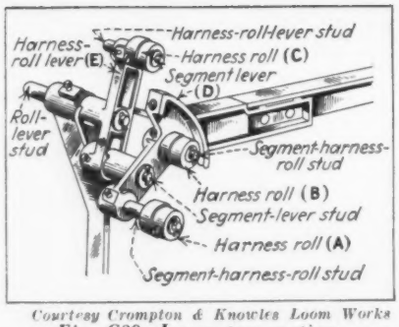


Copyright 1932, Draper Corp., Hopedale, Mass.

Fig. C38. Draper harness motion with auxiliary camshaft

turn the loom over for five picks, to make sure both levers and rolls balance. If, for instance, harness-roll lever (*E*) should move too far to the right, slacken up one or two holes on the straps from the fourth and fifth harness and take up a like amount on straps from the first, second, and third harnesses. If harness-roll lever (*E*) goes too far to the left, reverse this procedure. Should segment lever (*D*) go too far to the right, slacken up on the strap from the third harness and take up a like amount on straps from the first and second harnesses. If the segment lever goes too far to the left, reverse the procedure.

For a 6-harness twill use all three harness rolls and, with the fourth and fifth harnesses meeting at the center of the change, adjust the straps to that both levers are vertical. Check the balance as before. An example of the type of problem which may be encountered in adjusting this motion may help to clarify the above. Suppose, for instance, that in checking the balance, harness-roll lever (*E*) goes too far to the left, segment lever



Courtesy Crompton & Knowles Loom Works

Fig. C39. Lacey top motion

(*D*) too far to the right, and the strap from the first harness runs up on its screw. To eliminate these maladjustments, lengthen the straps from the third and fourth harnesses, say, four holes each; tighten up two holes on the straps from the first, fifth, and sixth harnesses, leaving the strap from the second harness as it is. Provided the adjustment has been properly judged, this will bring the harness-roll lever over to the left and the segment lever over to the right, and will turn the harness roll on the lower segment-harness-roll stud so that the strap from the first harness will not run up on its screw.

In setting the Lacey top motion, loomfixers should always try to reason out which straps should be slackened and which taken up, rather than just go ahead and alter the straps at random. It is important that all treadle rolls lie well up against the cams while adjustments are being made. If after adjusting the top motion it is found that some harnesses are too high over the race plate, drop these harnesses from the top and tighten a like amount on the corresponding jack straps. If some harnesses are too low, slacken up on the jack straps and tighten up a like amount on corresponding harness straps. These adjustments will not disturb the setting of the top motion.

The above instructions of setting the Lacey top motion should be carefully followed through, step by step, as this motion is difficult enough in setting to make it an exceedingly mean job for loomfixers who do not go about it correctly.

Wool Section—*Chapter V (Concluded)*

By BENJAMIN F. HAYES

Why Shuttles Fly Out

FLYING shuttles usually result from some one of a relatively few causes. Such causes can generally be isolated and removed without much difficulty, by application of methods already described. But on occasion, and especially in connection with operation of older looms, flying shuttles may be the result of any one of a number of unusual or rarely met causes. In such instances, loomfixers must call into play all their imagination and ingenuity, as well as mechanical ability, if the cause of the flying shuttles is to be detected.

Abnormal Causes

Manifestly, since these are "unusual or rarely met" causes, they cannot be cataloged, with causes and appropriate remedies listed in adjacent columns. It is, however, possible to note several such abnormal causes of flying shuttles, which have from time to time confronted the writer, and describe how their elimination was effected. These will serve as guides in directing the energies of loomfixers who find themselves faced with more or less similar problems.

On one occasion a loom was consistently throwing shuttles out, although a close examination of all affected parts disclosed no apparent maladjustment. Finally, it was noticed that the picking-roll arm casting was too close to the picking shoe. In all probability, the casting had come loose at some earlier date and been keyed on out of place. Simply placing the casting in proper position completely eliminated the trouble, and the loom performed satisfactorily thereafter.

At another time, a shuttle was flying out every time the shuttle boxes on a particular loom moved from the fourth cell to the second cell. After study, it was discovered the fourth cell did not start to move on time, and this was the cause of the trouble. Apparently, some loomfixer had adjusted this cell by use of the collar on the bottom of the box lifting rod. This left a space between the collar and the tube within which the box rod moves. When the space was removed, the box again began its movement on time, and the loom operated satisfactorily once more.

Shuttle-Mating Important

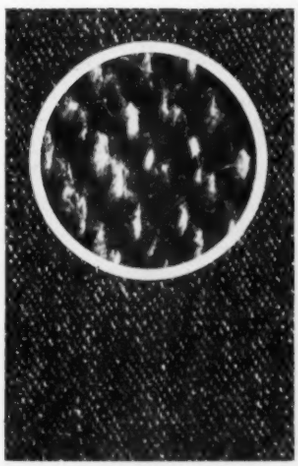
Improperly mated shuttles may also be responsible for trouble at times. Particularly is this likely when some almost new shuttles and some which have been in use for several years are put into the same loom. An easy way to rough-test such shuttles is to lay them on a flat surface, then bring the tips together. The two tips should meet exactly; if one tip is high and another low, trouble may be expected.

Actually, for best results every shuttle and every set of shuttles should be mated, fitted, and weighed before being put in use. A shuttle gage is a great help in this connection; such a gage can easily be made or purchased, and one should be in every loomfixer's kit.

Picker spindles are likewise guilty of causing flying shuttles sometimes. For instance, on one occasion the inside bearing of a picker spindle had become worn out and a patch had been placed on the loom. The hole in this patch was not centering with the raceway of the picker. The result was flying shuttles. The way to avoid the possibility of trouble from this source is never to place a picker on a loom without first making sure the outside spindle bracket so fits that, when the spindle is tight in the outside bracket, the inside end of the spindle will center with the picker raceway and the inside bearing of the picker spindle. All loomfixers will do themselves and their companies a favor if they will realize that proper fitting of these outside spindle brackets is very important, and that, if they are fitted correctly, the inside bearings of picker spindles will never wear out.

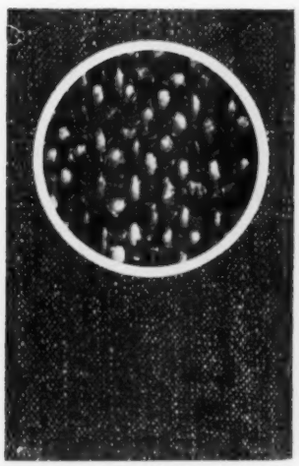
STAPLE COTTON FABRICS

By JOHN HOYE
Fabric Technician with W. Harris Thurston, New York



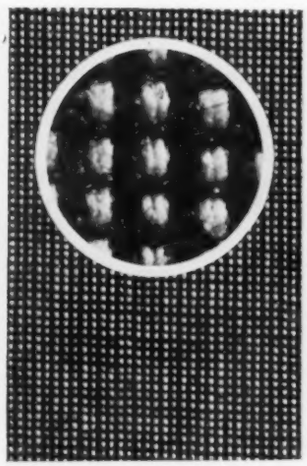
McCampbell & Co.

Coarse-yarn covert cloth, 28 in., 68x40, 2.40 yd., 3-harness warp twill



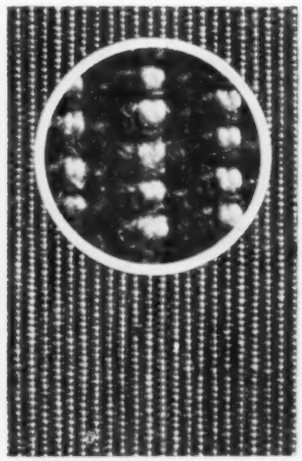
McCampbell & Co.

Fine-yarn covert cloth, 36 in., 68x52, 3.20 yd., plain weave



Pepperell Mfg. Co.

Pin check, 30 in., 84x44, 3.00 yd.



McCampbell & Co.

Pin stripe, 28½ in., 84x56, 3.25 yd.

This thirty-fifth installment of Mr. Hoye's series of articles on staple cotton fabrics, which began in the January, 1936 issue, continues the discussion of work-clothing fabrics.

COVERT

COVERT cloths are made of either worsted or cotton and have a characteristic mottled or flecked appearance due to the use of warp yarns which have part white and part color in them. They can be 2-ply yarns—one white and one colored ply, or they can be mock-twist single yarns.

Most of the staple cotton covert cloths are made with mock-twist single yarns spun from two rovings, one of which usually is white, and the other colored. The contrast can be reduced by using yarns containing a dark and a light shade of the same color and not containing any white. These yarns are used to produce such colors as oxford gray, etc.

Filling yarns generally are solid color, the same shade as the darker color used in the warp yarn.

Covert cloths are closely woven, three-harness warp-face twills. When single warp yarns are used, the twill line runs to the left. The twill line is less prominent because of the flecked appearance of the warp yarn. Sometimes, in the lighter and cheaper qualities, a plain weave is used.

Usually, covert cloths are given a firm, starched mill finish, and sometimes, in addition, are finished pre-shrunk. They are made in various shades of gray, tan, and blue. Light gray colored coverts are referred to as frock cloth. Some of those used for suitings, etc., are made in over-striped patterns.

Fine-yarn covert cloths are used for shirts, caps, smocks, children's overalls, etc. Heavier weight covert cloths are used for trousers, uniforms, summer suitings, service coats, overalls, etc.

Warp yarns: 14s to 20s for fine-yarn covert cloths; 9½s to 19s for coarse-yarn covert cloths. *Filling yarns:* 13s to 26s for fine-yarn covert cloths; 8s to 21s for coarse-yarn covert cloths.

Examples of coarse-yarn covert cloths:

28 in. 76x50 2.50 twill
30 in. 76x52 2.20 twill
31 in. 68x46 2.00 twill
36 in. 76x58 1.90 twill
36 in. 74x50 1.62 twill finished pre-shrunk
36 in. 72x55 1.66 twill finished pre-shrunk
36 in. 56x48 3.00 plain weave
28 in. 46x46 2.00 plain weave

Examples of fine-yarn covert cloths:

36 in. 68x45 3.90 plain weave
36 in. 68x48 3.70 plain weave finished pre-shrunk
36 in. 96x64 3.00 twill
36 in. 96x68 2.75 twill finished pre-shrunk

PIN STRIPES AND PIN CHECKS

Pin stripes are so called because of their white-line stripe effect on a blue ground. They are woven with a two-and-one basket weave, the same as that used for oxford or flat duck, in which two warp ends are woven as one, with the filling weaving plain. The warp ends are arranged 2 white and 4 blue to a repeat of the pattern. The filling is all blue. Sulphur or indigo colors are used. This fabric is known also as pin-stripe duck.

Pin checks are similar to pin stripes, except that they usually are lighter and have the warp ends arranged 2 white and 2 blue to a repeat of the pattern. This arrangement of the warp ends, together with the weave and the all-blue filling, produces a check effect without the necessity of using a box loom for weaving.

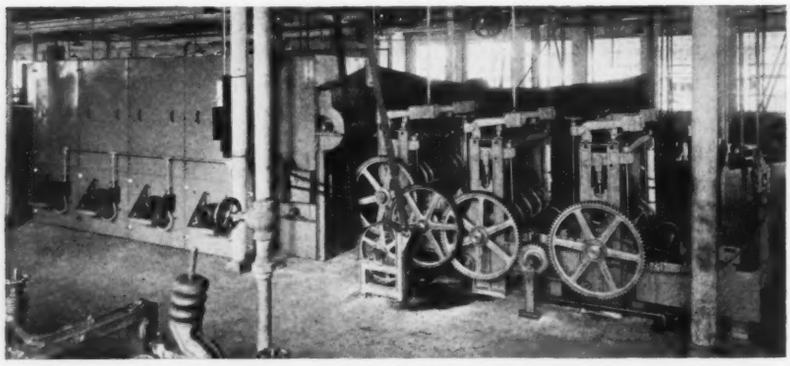
Pin stripes and pin checks are used for shop uniforms, overalls, smocks, work shirts, railroad caps, etc.

Warp yarns: 10s to 16s. *Filling yarns:* 12s to 20s.

Examples of pin stripes and pin checks:

28 in. 70x42 2.40 pin stripe
28½ in. 84x56 3.25 pin stripe duck
28 in. 72x42 2.80 pin stripe
36 in. 68x42 3.20 pin stripe
36 in. 70x42 2.65 pin stripe
28½ in. 84x56 3.25 pin check
30 in. 84x44 3.00 pin check

NEW MACHINERY AND PROCESSES



Backwasher and Dryer (Sargent)

Backwasher and Dryer

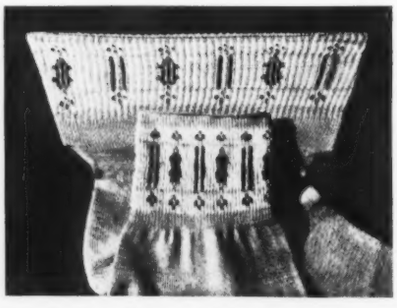
An improved backwasher and a redesigned backwasher dryer have been announced by C. G. Sargent's Sons Corp., Graniteville, Mass. The backwasher has been redesigned with a bowl of 44 in. width and rearrangement of top-squeeze-roll levers to provide for increased liquor capacity, better accessibility of the machine for the operator, and more than doubling of the number of ends that can be run through the machine. The first bowl has a pair of 5-in. driven brass feed rolls and two pairs of 3½ in. copper or brass immerser rolls with weights for top rolls; also, an 8-in. single immerser roll and a 3-in. guide roll. The second bowl has two 3-in. brass guide rolls and two 8-in. immerser rolls. Each bowl is served by squeeze rolls, consisting usually of steel bottom and vulcanized rubber or sectional rubber ring top rolls, turning on brass bearings and securely housed.

The three-apron type of dryer has been redesigned, with the frame—including sills, studs, plates, and girts—constructed entirely of steel. Double thickness steel and asbestos insulated removable panels are provided for sides and tops and inspection doors are located at the doffer end. A feature of the dryer is that three sectional wire-cloth aprons, running on ball bearings, and provided with traveling stock guides, have been substituted for heated metal cylinders. The ends lie loosely in parallel lines on the top strands of the conveying aprons, passing three times the length of the drying chamber, during which time warm air, circulated by direct-motor-driven pressure-type fans, passes alternately through the extended surface-heating coils and the wool fibers. Dryers are made in either 29-in. width apron or 44-in. width, and from 14 to 16 ends can be dried at the same time. The dryer is used for drying both white and colored card sliver, also dyed and vigoureux top and rayon top, and is obtainable in hourly production capacities ranging from 100 to 600 lb. It is built with three, four, or five circulating fans, depending upon the capacity desired.

Elastic Top Machine

Elastic yarn can be knit in small size hosiery tops with definite stitch structure like the main yarns of the fabric by a method and machine recently developed by Hemphill Co., Pawtucket, R. I. Elastic yarn incorporated at an auxiliary feed is knit independently of the main yarn incorporated at the regular feed. At the same time, patterning at the regular feed is independent of the auxiliary feed, so that the same scope for Banner wrap patterning obtains as on machines knitting without elastic.

Elastic yarn, which in effect is knitted in every course of the top, is fed to the needles in the needle hooks at a point between the front widening pick and the left side of the instep bracket under just enough tension for uniform knitting. The needles then are drawn down by an auxiliary stitch cam to a level slightly different from that of the needles taking yarn from the mouthpiece at the regular feed. Every other needle is selected for taking the elastic yarn at the auxiliary feed, so that when the elastic is drawn down, the previous stitch on every other needle at the regular speed is cast off and the elastic is knit in that stitch.



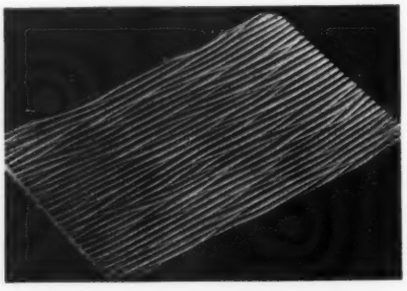
Banner Elastic Top (Hemphill)

The elastic-top machine is said to be adaptable for knitting plain tops with elastic, such tops plus horizontal striping, Banner wrap stripe, plain plating, or combinations of these.

Hemphill Co. states that the elastic yarns are short of their full stretch even after the fabric has been stretched to the breaking point, due to the way that they are knit.

Take-Up Roll Covering

A new type of Bull Dog take-up roll covering for looms has been introduced recently by Boston Woven Hose & Rubber Co., Cambridge, Mass. This product, known as the grain-finish type, is made by the Rotocure process of continuous vulcanization, which is used to produce uniform belting and other items. This process eliminates overlaps, which were inherent in intermittent flat-press process formerly used. In this way it assures uniformity of gage throughout the roll and better oil-resisting properties. The rubber stock used in this new grain-finish covering is identical with that used in the sand-finish type.



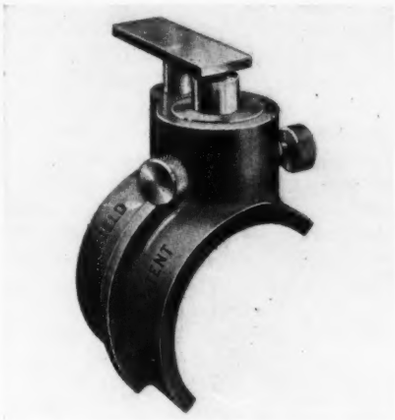
Grain Finish Covering (Boston Woven Hose)

Boston Woven Hose & Rubber Co. states that, due to the present popularity of the sand-finish take-up roll covering, there is no intention of abandoning its manufacture. Nevertheless, it is expected that as mill tests continue to show the superiority

of the grain-finish type, there will be a gradual replacement of the sand finish.

Card Grinder's Gage

For setting traverse wheel grinders to cylinders, doffers, and flats, Dronsfield Bros., Ltd., Oldham, England, has recently developed a card grinder's micrometer setting gage. John Hetherington & Sons, Inc., 72 Lincoln St., Boston, is sole agent in this country. With the aid of this instrument, grinders can now be set with mathematical accuracy, permitting of a positive depth of cut and at the same time assuring parallelism. The gage has a range of 0.007 in. and graduations of 0.001 in. each.

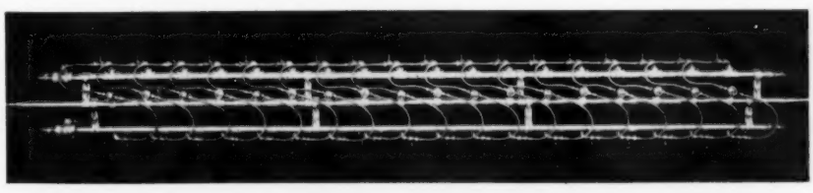


Card Grinder's Gage (Hetherington)

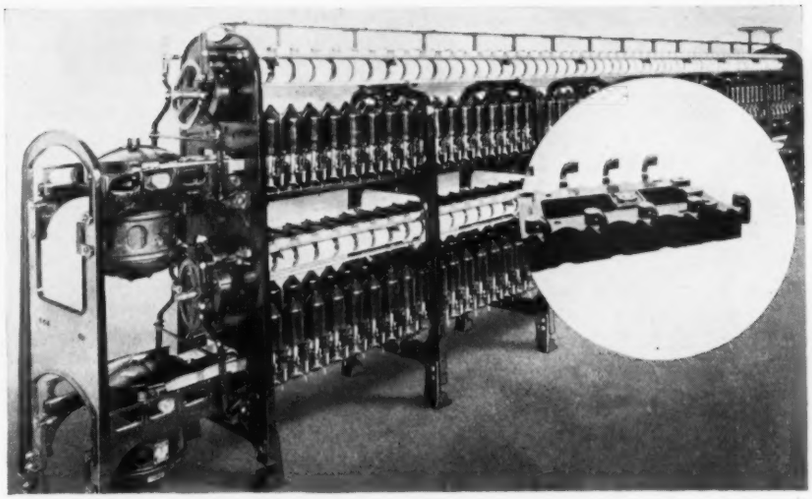
Web Moistener

A new web-moistening unit has recently been announced by Spray Engineering Co., Somerville, Mass. Unusually high degree of atomization is claimed for the compressed-air-operated spray heads, which are so adjusted as to provide uniform distribution over the entire width of the web.

The quality and volume of the spray are said to be adjustable within close limits, giving the operator extremely accurate control of the moisture sprayed on the web. Units are obtainable for any width web or for special requirements.



Web Moistener (Spray Engineering)



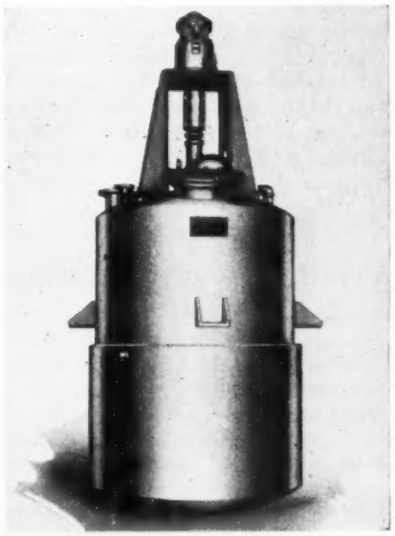
Twister, with UniRail construction shown in insert (Atwood)

Silk and Rayon Twister

Some 2,000 loose parts on an average sized machine are said to be eliminated by means of the solid, one-piece rail incorporated in the UniRail twister recently announced by Atwood Machine Co., Stonington, Conn. The rail is accurately machined from a single, solid piece of metal, with nothing to get out of plumb, shake loose, or require adjustment. The twister also embodies rigid double-mounted spindle swings with pre-calibrated spring tensions. The correct tension is put in when the machine is built; it needs no adjustment, but is so designed that any change in tension called for by varying requirements can be readily made. Positive vertical alignment is assured by this strong swing plus the UniRail construction. An ingenious hold-back arrangement makes it easy to remove each individual spindle from the belt for doffing and put it back without loss of adjustment.

Both top and bottom decks are the same width—10 in. between whorls. Large single idlers which contact the belt on both sides of the machine assure constant spindle speed. Motors are mounted on three-point support, ball-bearing wheels; this carriage arrangement facilitates maintenance of uniform belt tension, which is an aid to more uniform twist and better power economy. The end frame is so designed as to permit ready removal and replacement of motors. A simple, leak-proof 100% ball-bearing twist unit is located below the belt, and has silent chain drive to twist change gear.

Bobbin covers of the type described in the June, 1938, issue of TEXTILE WORLD, which replace the flyers, and also prevent fiber separation at high speed, are optional equipment.



Stainless Steel Kettles (Patterson Foundry)

Stainless Steel Kettles

For use in the manufacture of textile oil emulsions Patterson Foundry & Machine Co., East Liverpool, Ohio, has developed a line of stainless steel kettles. The kettles are available in various sizes, the one illustrated being 5 ft. in diameter by 6 ft. 6 in. deep, and built for 50 lb. internal working

pressure and 65 lb. jacket pressure. It is equipped with motor drive and improved type of stirring mechanism. These machines are supplied either with or without vent condensers. All internal parts are ground and polished to insure cleanliness in operation.

NEW CHEMICAL PRODUCTS

Surface-Active Agents

Two new surface active agents, Surfax and Surfax W.O., have been announced by E. F. Houghton & Co., Philadelphia. These products are adaptable to a wide variety of wet processes in the textile industry and possess a rapid wetting-out, penetrating, and dispersing ability.

Surfax is a white, granular, powdered substance, which is a combined wetting-out agent and detergent. It is said to be soluble in all practical proportions in water and to operate successfully in either acid, alkaline, or neutral solutions. Few operations require more than 0.2% solutions; in some processes less than 0.05% solution is adequate.

Surfax W.O. is an oil used as a wetting-out and softening agent. It has no detergent properties. It is particularly recommended for wetting-out and dyeing of hosiery, cotton, wool, rayon and silk yarns, and all types of underwear and piece goods. The manufacturers state that it is also particularly adaptable for Sanforizing and softening processes where a wetting-out agent is required. Surfax W.O. is not affected by soda ash. It may be used in acid baths not exceeding 0.5% concentration. One advantage cited is the exceptionally fast wetting-out speed at temperatures over 130° F.

Produces Germ-Resistant Textiles

Development of a new process for producing textiles which are antiseptic and germ resistant is announced by Neva Wet Corp. of America, 500 Fifth Ave., New York. The first license to use this process, known as Sani-Age, has been granted to Superior Felt & Bedding Co., Chicago. It is planned to issue licenses to manufacturers of other types of textile products.

Feed Water Conditioner

Announcement of a new type of compound for use in combatting boiler feed water difficulties is announced by American K. A. T. Corp., 122 East 42nd St., New York. This product, known at K. A. T., is a colloidal compound composed of a number of organic substances. It has been employed for some time in European countries, but has been introduced to this country only recently. K. A. T. is admitted to the boiler with the feed water. According to the manufacturer, it prevents scale formation, removes old scale, prevents corrosion, protects against caustic embrittlement, inhibits priming, prevents foaming, minimizes dangers of wet steam, and protects against oil in the boiler. It is stated further that the compound is simple to use and that it does not carry over with the steam, making it satisfactory for use in dyehouses and other plants requiring live steam for process work.

Scouring Compound

General Dyestuff Corp., 435 Hudson St., New York has recently introduced Igepal C, a new synthetic scouring and processing agent of I. G. manufacture. Igepal C is recommended for the scouring and processing of cotton, rayon, and other cellulose fibers. The outstanding characteristics of the product cited by the manufacturer, apart from its superior cleansing or detergent powers, are its excellent wetting out properties and its resistance to hard water, acids, and metallic salts encountered in textile processing. It is stated that the new compound prevents formation of lime soap, is not hydrolyzed by water, and is easily rinsed out of fabrics. Igepal C is recommended by the manufacturers for use in scouring and in the aftertreatment of dyed and printed fabrics.

Finishing Agent for Rayon

A new finishing agent designed primarily for use on acetate and rayon fabrics is announced by E. I. du Pont de Nemours & Co., Wilmington, Del. Known as Avitex R, this compound is also employed to some extent on cotton materials, and it is of interest on raw stock to improve the spinning properties. It is stated that the new compound possesses an advantage in exhausting from solution from a long bath onto the fiber and in being resistant to subsequent rinsing, giving a soft, full finish. It is also said to be resistant to hard water, hot ironing, and hot calendering, and to be stable under storage conditions. The finish leaves materials free from odor and not discolored, and has no deleterious effect on the light fastness or on the shade of dyes.

NEW PUBLICATIONS

Cotton, as a Raw Material

COTTON, by Harry Bates Brown; McGraw-Hill Book Co., New York; Price $5.00.

This scholarly work on cotton is all embracing. It gives the reader the historical background of cotton as a plant and as a textile; it probes the many planting problems of today, including plant diseases and warring insects as well as breeding developments; it finally concludes with a summary of the manufacturing processes.

As the author is in charge of cotton breeding at Louisiana State University, this book was certainly intended to be a text-book for agricultural students. It is a good one, and easily read for the growing and breeding developments of cotton is a romance itself. On the other hand, the book should be of particular interest to cotton buyers, classers and receivers of textile mills. By knowing the breeding problems and possibilities, present and future spinning requirements can be better gaged.

For Skill in Cotton Classing

COTTON CLASSING MANUAL; by H. H. Willis, Gaston Gage, and Vernette B. Moore; Textile Foundation, Washington, D. C.; multilithed copies obtainable from H. H. Willis, Clemson, S. C., at $1.25.

This is the sixth in a series of seven books on cotton yarn manufacture sponsored by the Textile Foundation. Other books of this series published to date are "Cotton Opening, Cleaning, and Picking," "Cotton Carding," "Drawing Frames," "Roving Frames," and "Cotton Spinning." A book on cotton combing, the final one of this series, will be published in the near future.

The "Cotton Classing Manual" contains extensive basic information about the sampling and standards for judging the quality of cotton. A discussion of cotton classing as an occupation, the types of positions available, and the requirements for securing and holding these positions, and cotton classing rules make it a valuable supplement to the skills re-

quired for grading and stapling. While the book is essentially a teaching manual, it should be useful to anyone interested in cotton classing, yet who does not have a thorough knowledge of that subject.

Topics discussed include the necessity for cotton classing, grade of cotton in terms of foreign matter and color, the cotton gin and cotton preparation, classing cotton in terms of staple length, character in cotton, the importance of cotton classing at the mill, price variations for grade and staple, cotton spot markets and future markets, speculation and hedging in cotton, the cotton classer at work, southern mill arbitration rules of 1935. In addition to the exercises at the ends of various chapters, forms to be used in cotton classing are included at the back of the book.

Patchwork—in Quilts

THE ROMANCE OF THE PATCHWORK QUILT IN AMERICA, by Carrie A. Hall and Rose G. Kretsinger; The Caxton Printers, Ltd., Caldwell, Idaho; $5.00.

Although this is not a new book it is important to textile readers at this time because of the great interest in the revival of the lovely old colonial designs in home decoration fabrics and domestics.

Giving the history of the art of quilt patches, and showing that history itself is defined in many of the old-time patterns which bring in war-themes, pioneer life, and political motifs, the author captivates the fancy of the reader with her lively manner describing that distinctive form of American art, and shows the modern day fascination of recapturing the spirit of long ago in new adaptations of a handicraft indigenous to American home life.

The book is highly recommended —with its bountiful illustrations—to all designers of home furnishing fabrics. There are, it is evident, means of adapting these old patches for use in bedspread designs or—even newer —bathroom or kitchen ensembles.

A Useful Second Edition

HANDBOOK OF INDUSTRIAL FABRICS; Second Edition; by George B. Haven; Wellington Sears Co., New York; $2.00.

In the introduction to this second edition of his industrial fabrics Handbook, Prof. Haven enumerates and briefly outlines the major changes and additions which have been made to bring the volume up to date and to increase its usefulness. Mention here of the new portions constitutes the only review of the book that is necessary, because, since the appearance of the first edition in 1934, it has become practically a standard work, adopted alike by business and educational institutions.

Briefly, the major changes which characterize the new edition are: addition of a chapter in regard to logarithms, slide rules, and nomographic charts; insertion of numerous weights and measures conversion tables; complete revision and resetting of the Specifications of the American Society for Testing Materials; inclusion of more than twenty new cuts, to replace obsolete ones or to extend the subject matter.

In addition, the entire text has been studied and edited to bring it up to the moment in regard to specifications, usage, and general subject matter.

A Contribution to Warp Sizing Literature

HANDBOOK ON COTTON WARP SIZING; Houghton Textile Research Staff, E. F. Houghton & Co., Philadelphia; $1.

Realizing the lack of an up-to-date and authoritative book on warp sizing, E. F. Houghton & Co., has compiled from data in the files of its research staff this handbook on cotton warp sizing. Among the subjects discussed are: cotton processing prior to sizing, purposes of warp sizing; starches and softeners used in warp sizing; penetrants and preservatives; size check up tests; common causes of and remedies for sizing problems; and sizing formulas for well-known fabrics.

As the book is published by a manufacturer of sizing compounds, it is not unnatural that the formulas given make reference to specific products (softeners and gums) developed by that company. With this exception, the book follows the general plan of any standard reference medium. The entire volume has been checked by leading manufacturers of starches, sizing machinery, practical mill men, and technicians. It is a real contribution to the literature on cotton warp sizing, and will be welcomed by experienced cotton manufacturers, students, junior executives, overseers, and others interested.

Classification of Antique Textiles

COTTON IN MEDIAEVAL TEXTILES OF THE NEAR EAST; by Carl Johan Lamm; Librairie Orientaliste Paul Geunthner, 12 Rue Vavin, Paris, France; $6.

In this 260-page book, which is a history of textiles exclusively or partly of cotton, the author classifies various mediaeval textiles of the Near East according to weave, design, fiber content, and probable time of origin. The author has discovered through study that cotton was much more generally used than has been commonly supposed.

The first part of the book includes chapters on twilled cotton fabrics, fabrics of wool and undyed cotton, tapestries in wool and undyed cotton, chain-stitch embroideries of wool, etc. The second part of the book consists of excerpts from mediaeval texts.

Weavers Work-History

PHILADELPHIA WEAVERS AND LOOMFIXERS; by Gladys L. Palmer and her assistants; WPA National Research Project, Report No. P–4, Washington, D. C.

This is a ten-year work history of 357 weavers and loomfixers, prepared with cooperation of Wharton School, U. of Pa. It indicates extent of unemployment which settled on this class of work since 1920 in Philadelphia. Migration of mills, changes in styles and technological improvements were given as causes. Ability of workers to shift to other industries was limited by their relatively high age. Survey is illustrated with photographs, charts and tables.

NEWS OF SUPPLIERS

Arnold, Hoffman & Co., Inc., textile chemicals, with main office in Providence, R. I., and plant in Dighton, Mass., have appointed two new district sales managers: Robert E. Buck for the Greenville, S C., territory and Harold T. Buck for the Columbus, Ga., territory. Robert E. Buck's address is P. O. Box 904, Greenville, and Harold T. Buck's address is P. O. Box 843, Columbus. It is proposed to install suitable warehouse facilities in the Greenville and Columbus territories. The Bucks are sons of the late Robert Buck, who was long connected with the Charlotte office of Arnold, Hoffman & Co.

Fifth Annual National Motor Truck Show will present the truck industry's new models to the world's commerce and industry from Nov. 11 to 17 in the New York Port Authority Building, New York. It will include everything in motor truck transportation from huge tractor and trailer combinations for heavy-duty, long-distance

hauling, to streamlined commercial delivery jobs. Represented will be every company in the nation which manufactures trucks and heavy-duty trailers as well as scores of leading parts, accessory and equipment makers. The show is held at the same time as the passenger automobile show.

Oscar Kohorn & Co., New York, announce that arrangements have been made for the manufacture in this country of equipment developed by Baron von Kohorn for the continuous aftertreatment of rayon staple fiber tow. The aftertreatment machine consists essentially of two series of grooved rollers, the top row being some inches away from the bottom series. The tow is spirally wound many times from the top to the bottom of each set and then progresses to the next set of rollers. While progressing around the grooved rollers, the yarn is desulphurized, washed, and bleached. It then passes through a special cutting device, and is curled and dried. This process is said to be much more mechanized than others now being used in the United States, although there are insulations abroad of this continuous equipment.

Abbott Machine Co., Wilton, N. H., has recently added S. A. Roane to its sales force in Greenville, S. C. This office is in charge of L. S. Ligon. Before coming to Greenville, Mr. Roane was with J. S. Fallow & Co., New Bedford, Mass., and also had considerable experience in the textile industry while with Barnes Textile Associates.

ARTISTIC INTEREST and sales appeal are effectively combined in this novel type of display card which is being distributed to the showrooms of cutters and also to retail stores by A. M. Tenney Associates to promote "Waltzlite" fabrics and ready-to-wear. This is a new 50-inch taffeta made of Tennessee Eastman acetate rayon yarn.

Walker Engineering Co., Gastonia, N. C., has added S. A. Moffitt to its staff in the dual capacity of sales engineer and consultant. He will handle inquiries pertaining to printing, dyeing, bleaching and finishing. Mr. Moffitt was recently superintendent of Imperial Printing & Finishing Co. and previously assisted in starting of the Rock Hill Printing & Finishing Co.

Louis Allis Co., Charlotte, N. C., announces appointment of Eugene B. Worth as district representative, with office at 215 Builders' Building. Mr. Worth was formerly with Mengel Co., Louisville, Ky. For six years following his graduation from N. C. State College, he was connected with Allis-Chalmers Mfg. Co.

Howard Bros. Mfg. Co., card clothing, Worcester, Mass., has appointed Carl M. Moore of Monroe, S. C., as representative in the Carolinas. He succeeds E. M. Terryberry.

J. L. Truslow of Whitin Machine Works, Whitinsville, Mass., sailed early in October for England to visit the Manchester Textile Exhibition.

Silent Hoist Winch & Crane Co., Brooklyn, N. Y., has removed its works and general office to 841-865 63rd St., where it is housed in new and larger quarters.

THE GENERAL COMMITTEE appointed in Atlanta, Ga., to handle the details of the forthcoming annual meeting of the American Association of Textile Chemists and Colorists, to be held in that city Dec. 2 and 3: Front row, left to right—W. B. Griffin, Kali Mfg. Co.; Geo. H. Small, National Oil Products Co.; Jno. C. Robertson, E. I. duPont deNemours & Co.; Chas. C. Jones, Georgia School of Technology; M. A. Land, Westinghouse Electric & Mfg. Co.; Jas. I. White, National Aniline & Chemical Co.; Robt. W. Philip, editor *Cotton*; Wm. H. Randolph, Jr., A. E. Staley Mfg. Co. Standing, left to right—Sam R. Clement, Monsanto Chemical Co.; Earl Arthurs, Solvay Sales Corp.; H. Gillespie Smith, Calco Chemical Co.; A. R. Macormac, Alabama Polytechnic Institute; A. Kempton Haynes, Rohm & Haas; J. F. Nation, J. M. Tull Co.; Earle Mauldin, Southern editor, TEXTILE WORLD; W. F. Crayton, E. I. duPont deNemours & Co.; John Turner, Chas. Bond Co.; R. A. Field, Jr., Newnan Cotton Mill; Allen Jones, Muscogee Mfg. Co.; R. C. Cochrane, E. I. duPont deNemours & Co.; L. A. Dillon, A. E. Staley Mfg. Co.; H. A. Blum, Paper Makers Chemical Co.; R. E. Howell, Frank G. North, Inc.

Dixie Chemical Products Co., Ltd., Birmingham, Ala., announces appointment of Byron E. Dodd as southwestern manager of its textile and metallurgical division, with headquarters at New Orleans, La.

Dary Ring Traveler Co., Taunton, Mass., announces the appointment of H. Reid Lockman as sales representative, with headquarters in Spartanburg, S. C. Mr. Lockman was formerly connected with Beaumont Mfg. Co.

Crocker-Wheeler Electric Mfg. Co., Ampere, N. J., announces that Wallace K. Brown has been appointed vice-president and general sales manager effective Oct. 1. B. D. Christian, vice-president and formerly general sales manager, will continue in an administrative capacity.

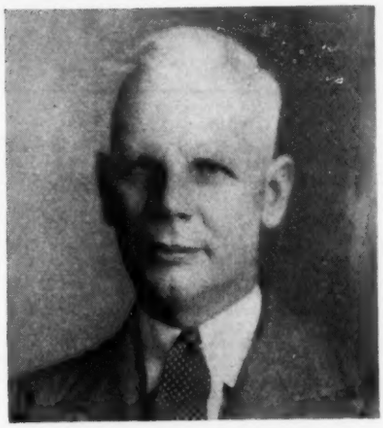
L. H. Gilmer Co., belt manufacturers, Tacony, Pa., announces a new direct factory branch in Chicago at 351 East Ohio St. A. B. MacFarland is in charge.

E. H. Jacobs Mfg. Co., loom supplies, Danielson, Conn., has removed its Johnson City, Tenn., plant to Charlotte, N. C.

Calco Chemical Co., Bound Brook, N. J., was awarded a first prize by the National Industrial Advertisers Assn. for its 1938 advertising campaign.

Julien P. Friez & Sons, Division of Bendix Aviation Corp., Baltimore, Md., has bought the business of Nicostat Products Inc., Buffalo, N. Y., and is moving it to Baltimore. Nicostat has developed a range of magnetic gas valves for slow or quick performance.

Palmetto Refrigeration & Air Conditioning Corp., Columbia, S. C., has been granted a charter, with a capitalization of $40,000. The company proposes to manufacture, sell and install refrigeration and air-conditioning units. Herman A. Hill is presi-



EDWIN R. RATH, who has been appointed senior engineer of the Power Transmission Council, Boston, Mass., as reported in this department last month. His previous work includes an associate professorship at the University of Pittsburgh, consultation in the utility field, metallurgical developments and four years as head of the industrial research department of the University of New Hampshire.

dent and treasurer, Ben F. Hill, vice-president and secretary.

Ashworth Bros., Inc., Fall River, Mass., have added John M. Reed to their staff. He will be located in the southern territory specializing on sales and repairs, with headquarters at Charlotte. Mr. Reed had been with Saco-Lowell Shops for 17 years, part of that time in the South.

Owens-Corning Fiber Glass Corp., a new corporation financed jointly by Owens-Illinois Glass Co. and Corning Glass Works, has been formed to produce a variety of products from fiber glass, according to Amory Houghton, chairman of the board of the new company, and Harold Boeschenstein, president. Principal offices will be in Toledo, Ohio, with New York offices at 718 Fifth Ave.

Refined Products Corp., 1000 Narragansett Blvd., Providence, R. I., has been formed by F. J. Weller to originate and manufacture textile processing materials. Mr. Weller was formerly with Onyx Oil & Chemical Co.

Revertex Corp. of America has moved its offices, laboratory and plant to 1 Main St., Brooklyn, N. Y.

Dobeckmun Co., Cleveland, Ohio, is manufacturing under new patents a non-tarnishing metallic and other colored threads produced by laminating a sheet of cellulose film on each side of aluminum foil with a transparent colored adhesive. The material is non-scratching, non-tarnishing and may be washed and dry-cleaned.

Spencer Lens Co., Buffalo, broke ground Oct. 7 at corner of Egger Road and Sugar Road, Cheektowaga, N. Y. (a suburb of Buffalo), for a new building in which to manufacture mechanical parts. Plant will be 210x410 ft., one and two stories, and will double company's present capacity.

White Motor Co., Cleveland, Ohio, has introduced for 1939 the lowest priced truck in its history. The chassis is priced at $950 at factory. White also introduces an air-cooled rear-engine drive truck. There are numerous improvements in the larger trucks of the company's line.

Oxweld Acetylene Co., a unit of Union Carbide & Carbon Corp., New York, has elected J. N. Walker as vice-president. He was general sales manager of Linde Air Products Co., also a unit of Union Carbide and Carbon Corp. He is succeeded at Linde by T. D. Cartledge, formerly his assistant.

Thomas & Skinner Steel Products Co., Indianapolis, Ind., announces that James C. Skinner, son of the company's secretary-treasurer, has resigned from the engineering department of the Pennsylvania Railroad to join the Thomas & Skinner engineering department. This company manufactures replacement parts and maintains a complete reconditioning service for full-fashioned hosiery machinery.

Roger A. Poor, who has been advertising manager of the Hygrade Lamp Division of Hygrade Sylvania Corp., Salem, Mass., for the last 18 years, resigned as of Oct. 1, and has established his own advertising business in Salem. Hygrade Sylvania has retained him as advertising counsellor.

H. H. Robertson Co., pre-fabricated building products, Pittsburgh, Pa., has appointed F. C. Russell as general manager of sales and Pierre Blommers as manager of ventilation and daylighting sales.

Gaylord Container Corp. has completed plans for a manufacturing plant at Milwaukee, Wis., located on Port Washington Road. Gaylord manufactures fiber shipping containers, cartons, bags, wrapping paper and other kraft specialties. The company owns its own timber lands, makes its own pulp and paper, as well as finished product.

Wage-Hour Q. and A.

(*Continued from page 61*)

Q: Are children under 16 permitted to work?

A: Yes, under certain conditions, but not in manufacturing. Minors between 16 and 18 are permitted to work in manufacturing unless the Children's Bureau of the Labor Department rules the specific employment dangerous and detrimental.

Q: A company engaged in inter-State commerce employs truck drivers who, however, do not drive across State lines. Are the drivers subject to the law?

A: Yes, because indirectly they are working on goods for inter-State commerce. By the same reasoning, all employees of companies engaged in inter-State commerce, unless specifically exempt, probably will be covered.

Letters on Public Relations Section

(*Continued from page 55*)

Canadian firms who are interested in such a plan. We, therefore, are taking the liberty of asking you to forward us any information you have on this matter, or a list of firms that we could get in touch with."—W. V. WILKINS, *La France Textiles, Ltd.*

"You have certainly hit on a very important phase of our present day problems and have done a good job on it. I enjoyed reading the section very much and am sure that any one who reads it will obtain much valuable information."—JAS. D. HAMMETT, *Chiquola Mfg. Co.*

"I have perused the 'Public Relations for Industry' reprint you sent, and it is my opinion that articles of this type are of paramount importance to every employer."—THOS. J. WALLNER, *President, Virginia Maid Hosiery Mills, Inc.*

"We judge you will be having requests for reprints of the very excellent section on Public Relations in your October issue, so please enter our request for about 25."—W. M. BERRY, *Assistant Secretary, Primary Textiles Institute of Canada.*

"I have found this article of much interest and agree with the author in the many fine points that are brought out. I feel that this will prove of untold benefit to all industry and particularly to the textile industry. I feel that we have been very backward in all of the phases embodied in public relations and trust this article will be a great help in awakening textile management along these lines."—W. A. L. SIBLEY, *General Manager, Ware Shoals Mfg. Co.*

"Your Public Relations Section of TEXTILE WORLD is an excellent factual presentation of the textile industry and the part it is playing in the life of everyone. I was particularly interested in the article, 'Supplying a Basic Need,' as well as the enlightening chart at the bottom of page 77.—G. EDWIN HEMING, *Secretary, The Merrill Anderson Co.*

"As a regular reader of the TEXTILE WORLD, I have been deeply interested in your editorial policy concerning human relations in industry (your October issue). If you have any extra copies of the Public Relations Section in the recent issue of TEXTILE WORLD, I am sure that I could place a half-dozen where they would be able to increase the scope of your contacts and thereby contribute a bit to your interesting program."—G. ROBERT ORRILL, *Research Department, Bauer & Black Division of the Kendall Company.*

TEXTILE WORLD ANALYST

TEXTILE WORLD's index of textile mill activity for September was only 5% below that for the corresponding month in 1937, and was 15% above an assumed "normal" September. Total activity for the first three quarters of this year was 29% below the record rate of 1937, but only 5% below an assumed "normal." The encouraging phase of the current situation is that the average monthly activity during the third quarter of 1938 was 28% above the monthly average in the first half. This trend is due to continue, and to cut down the deficit from last year, by the time the twelve months are completed.

TEXTILE WORLD's compilation of manufacturing margins on carded cotton fabrics and yarns for October showed a static condition for the former and an improvement for the latter.

TEXTILE WORLD's price index numbers for October show slight advances in raw cotton, cotton yarn and gray goods; in the entire wool series; and in raw silk.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Figures on cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

Date	Cotton Index Numbers: Cotton	Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Silk Index Raw-Silk	Rayon Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
1936 ave.	45	63	63	68	72	78	76	93	23	25
1937 ave.	42	65	67	74	79	82	85	107	25	27
Jan. 1938	32	47	49	62	57	63	68	97	21	26
Feb. 1938	33	47	50	62	53	60	67	97	22	23
Mar. 1938	33	47	50	62	51	58	66	88	22	23
Apr. 1938	32	46	49	62	51	57	66	80	22	23
May 1938	31	46	48	62	50	57	64	80	21	22
June, 1938	31	45	47	61	49	57	64	80	21	21
July, 1938	33	48	50	57	53	59	64	80	24	21
Aug. 1938	31	48	48	53	56	59	64	80	23	22
Sept. 1938	30	47	47	53	52	58	64	80	23	22
Oct. 1938	32	48	48	53	54	60	65	81	24	22

Key wool prices with usual comparisons follow:

	Nov. 1 1938	Oct. 1 1938	Nov. 1 1937	Nov. 1 1936
Fine and fine med. territory	$0.66	$0.63	$0.83	$0.88
Ohio ⅜s	.33	.30	.38	.40½
Tops fine 64–66s	.90	.88	1.03	1.13
Average ⅜s	.78	.75	.92	.95
High ½	.72	.67	.88	.88
Noils, fine	.58	.58	.67	.68
¼	.45	.44	.52	.55
2-40s 60s wstd yarn	1.37½	1.35	1.65	1.55
2-32s 56s wstd yarn	1.17½	1.15		
8020 serge	1.70	1.65	2.00	1.87½

Current statistics on wool consumption and mill activity:

	Sept. (weekly average)	Aug. (weekly average)
Wool consumed, clean equiv.		
Apparel wool, lb	4,905,000	5,784,000
Carpet wool, lb	1,597,000	1,506,000
Machinery activity (40-hr. shift)		
Looms (50-in. and wider)	77.2%	86.0%
Carpet looms	58.1%	50.7%
Combs	112.3%	138.4%
Worsted spindles	72.7%	80.3%
Woolen spindles	89.7%	101.5%

Rayon fabric shipment index reported by the National Rayon Weavers Association and the National Federation of Textiles, follows:

1934 = 100	Sept., 1937	Aug., 1938	Sept., 1938
Taffetas, Twills, Linings and other staples	232	267	253
Dress Goods Novelties and other Fancies	84	97	105
Total	135	153	154

Statistics concerning operation and the raw material situation:

	Sept.	Aug.
Spindle activity (% activity)*	72.8	76.2
Spindle activity (millions of hours)	6,613	7,374
Cotton consumed (bales)	534,037	561,406
Cotton exported (bales)	388,658	200,851
Cotton imported (bales)	10,631	18,271

* Based on 80-hr. week.

Key rayon prices and statistics follow:

Prices	Nov. 1 1938	Oct. 1 1938	Nov. 1 1937	Nov. 1 1936
Viscose process				
75 denier (18–30 fils.)	$0.74	$0.74	$0.93	$0.90
100 denier (40 fils.)	.68	.68	.82	.75
150 denier (40 fils.)	.51	.51	.63	.69
Acetate process				
150 denier	.54	.54	.63	.06
Cupra. process				
150 denier (112 fils.)	.52	.52	.68	.60
Rayon staple 1½, 3 and 5½ denier	.25	.25	.25	.28

Indices of Deliveries*

Statistics**	Oct.	Sept.	Aug.
In year 1938	677	874	877
In year 1937	366	562	691

*Rayon Organon. **Exclusive of Acetate Daily average 1923-25=100.

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	21.4	July, 1937	20.1
October, 1933	19.1	October, 1937	17.3
January, 1934	18.4	January, 1938	16.2
April, 1934	17.6	February, 1938	16.2
July, 1934	15.5	March, 1938	16.1
October, 1934	17.4	April, 1938	15.9
January, 1935	16.2	May, 1938	15.9
April, 1935	16.1	June, 1938	15.2
July, 1935	15.2	July, 1938	16.5
October, 1935	17.7	August, 1938	15.6
January, 1936	17.2	September, 1938	15.2
April, 1936	14.3	October, 1938	15.2
July, 1936	16.9	Oct. 5	15.3
October, 1936	21.2	Oct. 12	15.3
January, 1937	28.6	Oct. 19	15.3
April, 1937	25.9	Oct. 26	15.0

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	23.5	July, 1937	17.8
October, 1933	20.0	October, 1937	15.3
January, 1934	18.3	January, 1938	13.5
April, 1934	15.9	February, 1938	12.9
July, 1934	14.6	March, 1938	12.9
October, 1934	14.6	April, 1938	12.7
January, 1935	13.5	May, 1938	12.8
April, 1935	14.1	June, 1938	12.9
July, 1935	14.3	July, 1938	13.3
October, 1935	15.8	August, 1938	15.6
January, 1936	18.4	September, 1938	13.7
April, 1936	15.6	October, 1938	14.0
July, 1936	15.0	Oct. 5	13.3
October, 1936	17.2	Oct. 12	13.9
January, 1937	20.8	Oct. 19	14.4
April, 1937	22.6	Oct. 26	14.2

Key cotton prices with usual comparisons follow:

	Nov. 1 1938	Oct. 1 1938	Nov. 1 1937	Nov. 1 1936
Spot Cotton, N. Y.	9.01	8.25	8.03	12.08
High previous month	9.01	8.35	8.78	12.64
Low previous month	8.25	7.88	8.05	12.01
10s hosiery cones	19	19	19	26
10s/2 carded skeins	19	18	19½	26
20s/2 carded peeler warps	22	20½	22	29½
60s/2 combed peeler warps	49	47	49	55
60s/2 mercerized cones	63	63	65	69
37 in., 3-yd. drill	6¼	6¼	7⅛	9 1/16
38½-in. 64x60s	4½	4½	5⅛	7 1/16
36-in. 4-yd. 56x60s	5 3/16	5 1/16	5¼	7 7/16
Denim, 2.20s	10½	10½	12	14

Key silk prices and statistics follow:

Prices	Nov. 1 1938	Oct. 1 1938	Nov. 1 1937	Nov. 1 1939½
Crack XX 13/15 wh. 78%	$1.75	$1.76½	$1.67½	$1.82
Tram, 5thd Japan 85%	2.52	2.41	2.51	2.53
Tram Crack XX 78%	2.45	2.34	2.36	2.38
60s-2, spun silk	3.00	3.00	3.15	2.95

Statistics	Imports	Approximate deliveries	Stocks at Warehouses
October, 1938	38,731	35,631	43,811
September, 1938	39,808	38,844	40,711
August, 1938	35,946	38,504	39,747

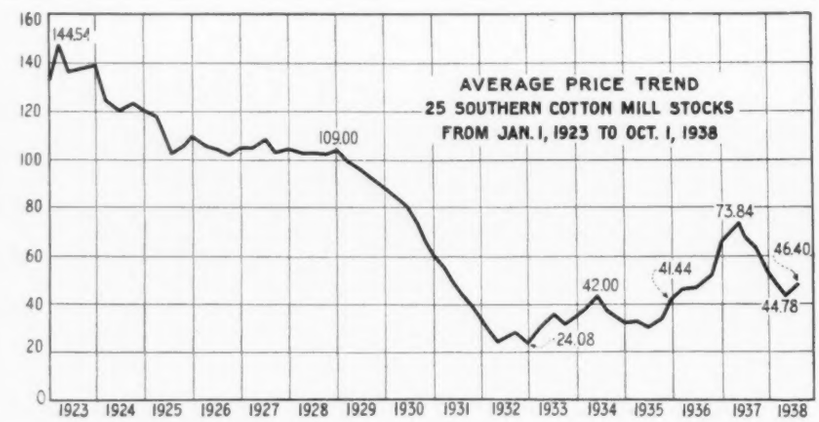


Chart showing price trend of southern cotton mill stocks compiled and issued by R. S. Dickson & Co., Charlotte, N. C. Average prices in dollars per share are shown at a number of the market's turning-points.

THE PERSONAL PAGE

Clarence L. Ederer, of R. J. Ederer Thread Co., Philadelphia, was re-elected president of the Philadelphia Textile Manufacturers Association, at the annual meeting of this group. **C. Marlin Bell** is the managing director.

Capt. Ellison A. Smyth, dean of southern textile manufacturers, celebrated his 91st birthday quietly at his estate "Connemara" at Flat Rock, N. C. on Oct. 26. He is president of Balfour (N.C.) Mills.

W. D. Anderson, president of Bibb Mfg. Co., Macon, Ga., was elected general chairman of the 1939 Macon Community Chest campaign.

Homer Scott has been elected president of the Homesteads Industries Co., Inc., which will operate a $300,000 silk hosiery mill on the Bankhead Farms near Jasper, Ala. **Ted Ballew,** secretary; **W. D. Hamilton,** vice - president, and **A. C. Hester,** treasurer. **Kelley Herring** is a director.

W. H. May, president of May Hosiery Mills and McEwen Knitting Mills, both of Burlington, N. C., has established a memorial library in honor of his wife, who died while they were on a trip around the world. For this contribution he was honored recently by the Burlington Exchange Club when his name was inscribed as the first one in the "Book of Golden Deeds" which is dedicated to outstanding contributions in fields of service.

B. X. C. Bailey was elected president of the eastern division of the Textile Society of Canada, at the annual meeting and banquet in Montreal early last month. Other officers elected were **H. F. Mills** honorary president; **W. J. Buck** and **J. A. Grant,** vice-presidents; **P. W. Walsh,** secretary-treasurer and **S. F. Toupin, T. Milnes, N. Thompson** and **H. O. Beland,** named to the council.

Herbert A. Currier, of Waterman, Currier & Co., New York, was re-elected chairman of the board at the annual meeting of the Association of Cotton Yarn Distributors, Philadelphia. **Frank E. Slack** was re-elected president. Other officers are **Charles F. Schell** of Schell, Longstreth & Co., treasurer, and **T. Ewing Montgomery,** secretary and counsel.

C. J. Fawcett, general manager, National Wool Marketing Corp., Boston, Mass., was the guest speaker on Oct. 7 before the Boston University School of Business Administration.

H. E. Michl has joined the staff of the Cotton-Textile Institute, Inc., New York, as an economist. He received a leave of absence from the University of Pennsylvania for a period of a year.

Frederick B. Allen, who has been general manager of M. J. Whittall Associates, Worcester, Mass., has resigned

125th Anniversary for M. T. Stevens & Sons Co.

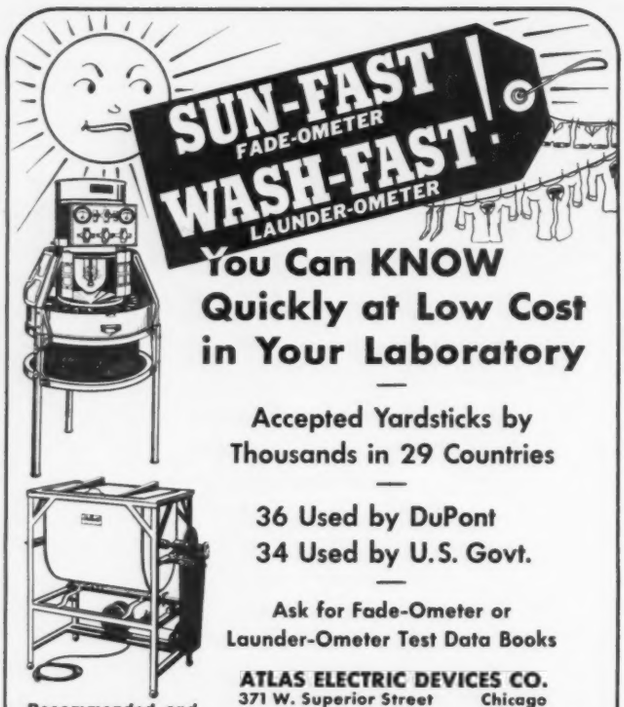
Nathaniel Stevens who founded the Stevens Woolen Mills in 1813 and was active in the business for 52 years. He died in 1865.

Moses T. Stevens, son of Nathaniel who followed in his father's footsteps. He was active in the business for 63 years, dying in 1907.

Nathaniel Stevens, son of Moses T., and grandson of Nathaniel, president of M. T. Stevens & Sons Co. since 1901. The company now includes nine mills.

Three generations of Stevens who successively headed the Stevens woolen and worsted business are shown above. Nathaniel Stevens (at left), grandfather of present Nathaniel Stevens (at right) started the business at North Andover in 1813. The business now includes the Stevens Mills, No. Andover, Mass.; Marland Mills, Andover, Mass.; Pentucket Mills, Haverhill, Mass.; Franklin Mills, Franklin, N. H.; Osgood Mills, North Andover, Mass.; Peace Dale Mills, Peace Dale, R. I.; Merrimack Woolen Mills, Lowell, Mass.; Stow Woolen Mills, Gleasondale, Mass.; Hockanum Mills, Rockville, Conn.

***SPEAKER'S TABLE** at annual meeting of National Association of Cotton Manufacturers, held in Boston, Oct. 6 (reported in our October issue), from left to right: H. S. Davis (Wharton School), Frank I. Neild (past president, N.A.C.M.), W. L. McLaurine (secretary, A.C.M.A.), W. Ray Bell (president, Association of Cotton Textile Merchants), Samuel H. Cross (Harvard University), Russell T. Fisher (president, N.A.C.M.), J. R. Cheatham (president, A.C.M.A.), John E. Greene (chairman, morning session), Dr. Claudius T. Murchison (president, Cotton-Textile Institute), F. S. Blanchard (Pacific Mills).*



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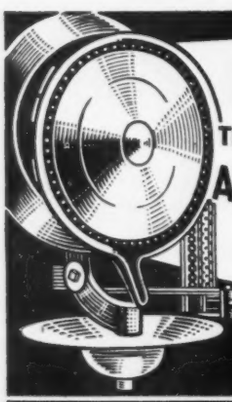

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and will return to his former work as public accountant in Boston.

Ralph E. Loper, industrial engineer, Fall River, Mass., returned last month after a six weeks visit to Europe where he visited many textile mills.

Louis Bachmann, L. Bachmann & Co., Inc., New York, was tendered a dinner by the Men's Clothing and Woolen Division of the Federation of Jewish Charities on Oct. 16 at the Hotel Ambassador. Among those attending were Lord Barnby, English wool merchant and manufacturer, and Louis Surut, of the Woolen Corp. of America.

Donald K. Woodward, for 20 years with Barnes Textile Associates, Boston, and for the last four years in charge of the engineering work done by that firm at Riverside & Dan River Cotton Mills, Danville, Va., has resigned that connection to become assistant president of the Riverside & Dan River Cotton Mills, of which **Robert R. West** is president.

Herbert H. Hughes, formerly overseer of finishing at Swift Mfg. Co., Columbus, Ga., has been promoted to the superintendency of that plant. He succeeds **F. K. Petrea** who resigned effective Oct. 8. Mr. Petrea is a former president of the Southern Textile Association and has been active in the textile industry all his business life.

Charles B. Nichols has returned to Anderson, S. C., from Lowell, Mass., and has become vice-president of the Appleton Co.

S. Y. Austin, formerly vice-president of Callaway Mills, LaGrange, Ga., has been appointed managing director of Farr Alpaca Co., Holyoke, Mass.

H. C. Neren, of Roanoke, director and general manager of the American Viscose Corp., was elected president of the Virginia Manufacturers' Association at the annual meeting at Old Point Comfort, Va., last month.

S. M. Butler, assistant secretary and treasurer of Carlton Yarn Mills, Inc., Cherryville, N. C., was recently elected a member of Gaston County Welfare Board. **E. D. Maynard,** superintendent of Chronicle Mills, Belmont, N. C., is also serving as a member of the board.

Rudolph Harrington, formerly technical superintendent of United States Rubber Products, Inc., Winnsboro (S. C.) Mills, has been promoted to general superintendent of all their southern mills, with headquarters at Hogansville, Ga. He is succeeded at Winnsboro by **Stuart H. Sherman.**

Charles J. Brick, inspector in chief of the Raw Silk Laboratory of United States Testing Co,, Hoboken, N. J. sailed for Japan from Seattle on Oct. 28. He will make a study of raw silk grading, particularly as to cleanness and will return to this country around Jan. 1.

P. C. Wayner, president, spoke at the meeting of the Textile Designers, Analysts and Technicians Associates held Oct. 15 in Fall River, Mass., on "Rayon Throwing." **Frank Kostecki** was appointed chairman of the November meeting to be held in West Warwick, R. I.

John K. Northway has joined Coopers, Inc., Kenosha, Wis., as head of their advertising department and assistant to A. R. Kneibler, vice-president. Mr. Northway was formerly advertising manager for Marshall Field & Co's store for men.

Roger Walcott, recently with J. P. Stevens & Co., New York, and formerly with Southeastern Cottons, Inc., is with H. S. Parker Co., specializing on staple cotton goods.

M. D. Vaughan, cost clerk of Blue Ridge Mills, Altavista, Va., has been appointed office manager of Roanoke (Va.) weaving division of Burlington Mills, Inc., Vinton, Va. Mr. Vaughan will be succeeded by **Jake Archer,** at present a member of the office force at Altavista.

B. Ellis Royal, secretary of Southern Textile Association, Charlotte, N. C., was formally inducted into the Lambda Chapter of Phi Psi, Honorary Textile Fraternity, at Auburn, Ala., on Oct. 10.

Arthur W. Bachman has become a member of the southern sales force of George B.

Textile Calendar

- *Piedmont Division, S.T.A., Charlotte, N. C., Nov. 19, 1938.*
- *American Association of Textile Chemists & Colorists, annual meeting and convention, Atlanta-Biltmore Hotel, Atlanta, Ga., Dec. 2 and 3, 1938.*
- *National Exposition of Power and Mechanical Engineering, thirteenth show, Grand Central Palace, New York, Dec. 5 to 10, 1938.*
- *A.S.M.E., Textile Section, Annual meeting, Engineering Societies Bldg., New York, Dec. 7, 1938.*
- *Industry-wide Hosiery Conference, New York, Jan. 18 and 19, 1939.*
- *Southern Textile Exposition, thirteenth show, Textile Hall, Greenville, S. C., April 3 to 8, 1939.*
- *Knitting Arts Exhibition, 35th annual show, Commercial Museum, Philadelphia, April 17 to 21, 1939.*

Pfingst, Inc., with headquarters at Greensboro, N. C., in the Guilford Bank Building.

J. E. McGovern, formerly of Hackettstown, N. J., is secretary and treasurer of the new Alamac Hosiery Mills, Inc., Reidsville, N. C.

Paul O. Ferrel, general sales and merchandise manager of Real Silk Hosiery Mills, Inc., has resigned after 15 years with the company. **C. W. Price** is now acting sales manager, and **J. L. Mueller** is merchandise manager.

Thomas Bredbury, formerly in charge of Shawsheen and Wood Mills of the American Woolen Co., has become assistant superintendent of Peerless Woolen Mills, Rossville, Ga.

Lloyd C. Kinsey now heads the cotton yarn department of the National Spinning Co., Brooklyn, N. Y. He was recently in charge of the New York office of L. P. Muller & Co. and has had 20 years experience in manufacturing and merchandising cotton yarns.

Robert Howison, formerly assistant manager of the Chicago sales territory of Bigelow-Sanford Carpet Co., has become manager of the Philadelphia sales territory, succeeding **John Moffitt** who was retired after a period of service of 48 years.

William S. Montgomery is now representative in the Pennsylvania territory for the American Yarn & Processing Co., Mount Holly, N. C. He will maintain offices at 1600 Arch St., Philadelphia, Pa.

E. P. Jenkins is now superintendent of the Martinsville (Va) Cotton Mills, having resigned his duties with the Inman (S. C.) Mills.

R. L. Loven is the new superintendent of G. & H. Hosiery Mills, Hickory, N. C. He was formerly superintendent of the Adair Hosiery Mills, Clinton, S. C.

S. M. Cauble has become superintendent of the Trenton Cotton Mills, Gastonia, N. C., succeeding **S. H. Sherman,** who resigned to become technical superintendent of the United States Rubber Co., plant at Winnsboro, S. C.

H. J. Murphy has become superintendent of the Bibb Mfg. Co., plant at Reynolds, Ga.

IN COMMEMORATION of its 100th anniversary this year, W. J. Dickey & Sons, Oella, Md., has issued the medal which is shown above. It features a portrait bust of William James Dickey, founder of the company, who was born in 1814 and died in 1896. The inscription on the medal says "Born in Ballymena, Ireland, brought to America in 1820, he acquired a classical education in Hebrew, Greek and Latin. Disappointed in his desire to become a Presbyterian minister, he entered the employ of his father, a manufacturer of woolens in the city of Baltimore. Four years later he set up in the same business for himself, conducting his affairs with industry and sagacity. Guided by a fine sense of honor, he enjoyed great success in his 82 years. He won high distinction in the life of his city and left an honored name." The medal was designed by the sculptor Louis Rosenthal.

John A. Spooner, advertising manager, American Viscose Corp., reviewed the nine-year history of that firm's quality control plan in a talk before the New York City Federation of Women's Clubs, Hotel Roosevelt, Oct. 25.

E. S. Dunn, general superintendent of Avondale Mills, Sylacauga, Ala., was elected a vice-president of the company at a recent stockholders' meeting. He has been with the company for 33 years.

J. W. Roberts has resigned as superintendent of the Angle Silk Mills, China Grove, N. C.

C. A. Meister, Jr., formerly head of the greige goods department of Farr Alpaca Co.,

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has become superintendent of the spun rayon department of Graniteville, (S. C.), Mfg. Co., which will specialize in mixtures of spun rayon and other fibers

Harold W. Brightman, vice-president, L. Bamberger & Co., Newark, N. J., spoke before the American Association of Textile Technologists in New York on Nov. 2, on "The Consumer Movement — New Opportunities for the Technologist." **E. R. Schwarz,** M.I.T. professor, spoke before the October meeting on fiber, yarn and fabric structure.

Joseph Schmetz, president of the Woonsocket, R. I. Independent Textile Union, has been appointed receiver of the Tarkiln Woolen Mills, Inc., Nasonville, R. I., on recommendation of Henry Soubricas, who resigned Oct. 20.

Rufus E. Smith, formerly superintendent of the Reynolds (Ga.) plant of the Bibb Mfg. Co., recently joined the detective division of the Macon (Ga.) police department.

W. Lee Smith, formerly of Gastonia, N. C., has been made superintendent of the Woodlawn Mill, plant of American Yarn & Processing Co., Mount Holly, N. C.

G. E. Willis is now superintendent of carding of Worthen Bag Mills, Nashville, Tenn. He was formerly with the mills at Laurel Hill, N. C.

Frank L. Asbury has been appointed superintendent of Gossett Mills, Anderson, S. C., succeeding **J. Wilbert Wood,** who has been promoted to general manager of the Anderson plants.

George Schofield has joined the staff of Irving Schwartz Co., New York, greige goods brokers. He was formerly with the Waldrich Co., and with the Pioneer Piece Dye Works.

Philip La Monica, formerly with Duplan Silk Corp., New York, is now in charge of converting silks and rayons for A. Wimpfheimer & Bros., Inc., New York.

Alexander Band has become associated with the trousering division of Dept. 1 of the American Woolen Co., New York. He was recently with the Farr Alpaca Co.

W. E. Floyd, formerly superintendent of Goodyear Decatur (Ala.) Mills, has been transferred to Goodyear Clearwater Mills No. 3, Atco, Ga., as assistant superintendent. He is succeeded at Decatur by **C. W. Young.**

W. R. Garrison has resigned as superintendent of Grenaco Knitting Mills, Inc., of Rockingham, N. C. His successor has not been announced.

Ben Lambeth, who has been second hand in No. 2 card room of Cannon Mills, Kannapolis, N. C., has been promoted to assistant superintendent on the third shift.

L. W. Flynn, for several years overseer of carding of the Gayle plant of Springs Cotton Mills, Chester, S. C., sailed Oct. 1, on the steamer "Eastern Prince" for Buenos Aires, Argentina, to take the position of carding master in the Sudaintex Mill.

James Oates, formerly overseer of spinning at Sibley-Enterprise Co., Sibley Mill, Augusta, Ga., has become overseer of carding and spinning at Santee Mills, Bamberg, S. C.

K. B. Brigman is now overseer of the cloth room at Kendall Co., Mollohon plant, Newberry, S. C., succeeding **Marvin Law,** who has been made overseer of weaving at that mill.

Everett Skinner has been appointed a styler and salesman with the American Woolen Co., New York. He was formerly head designer of Uxbridge (Mass.) Worsted Mills.

Obituary

Henry W. Lilly, aged 82, retired textile manufacturer and banker of Fayetteville, N. C., died Oct. 11. For many years, Mr. Lilly was president of Victory Cotton Mills (now Faytex).

William Parker, Jr., aged 49, formerly president of Standard Cotton Mills, Cedartown, Ga., died recently.

Daniel Webster Porter, aged 85, largest single stockholder and a director of Springfield (Tenn.) Woolen Mills Co., died recently at his home.

Henry D. Martin, textile authority and author, died recently at Mansfield, Mass., aged 72. He had been identified with many mills, in a supervisory capacity. He was the author of several articles which appeared in TEXTILE WORLD, the last one being entitled "Miscellaneous Calculations of Use to Cotton Mills" in our Oct. 11, 1930 issue.

W. H. Norris, aged 76, retired cotton mill executive, died suddenly at his home in Greenville, N. C., Oct. 9. He was formerly manager of the Marlboro Cotton Mills, Ben-

nettsville, S. C.; the Kinston (N. C.) Cotton Mills, and the Greenville (N. C.) Cotton Mills. He retired in 1923.

George Otis Draper, aged 71, retired secretary of the Draper Corp., Hopedale, Mass., and an authority on cotton machinery, died at San Pedro, Cal., Oct. 21. He was a native of Hopedale and was graduated from the Massachusetts Institute of Technology in 1887. After two years with the Hopedale Machine Co., he became a member of the firm of George Draper & Sons, later merged with the present Draper Corp. In 1896 he became secretary of the organization and in 1908 resigned to undertake industrial development work. He won recognition as an inventor and at one time held over 100 patents on cotton and other machinery. He was a former vice-president of the National Association of Cotton Manufacturers and was a director in a large number of industrial companies. He was a writer of originality and force upon industrial, economic and other subjects.

James Lees, aged 79, chairman of the board of Ardross Worsted Co., Philadelphia, died Oct. 31. Born in England, he came to this country in 1879. In 1899 he helped found the Ardross Mill.

Charles Newcomb Brush, aged 78, president of the Brush Cotton Co., Boston, Mass., and a prominent cotton broker and importer died in that city on Oct. 8 after a short illness.

William H. Cole, aged 53, assistant controller of American Thread Co., New York, died Oct. 15, in Atlanta, Ga.

Wallace F. H. Lyons, aged 67, for 50 years active in the Worth Street district, New York, died Oct. 18. He was for many years with Catlin & Co., and more recently with Joshua L. Baily & Co., retiring from that firm in 1937.

Paul R. Stevenson, credit manager, Real Silk Hosiery Co., Indianapolis, Ind., died Oct. 14 as a result of an automobile accident.

John Lindsay, aged 66, president of Lindsay Hyde Co., textile machinery, Philadelphia, died Oct. 15.

Harry Waddell, aged 53, president of Waddell & Bannigan, Inc., Paterson, N. J., died Oct. 10.

Charles Norman Harrington, who retired several years ago as manager of the La-Crosse (Wis.) Knitting Co., died last month.

Robert Almond, retired cotton classer for American Thread Co., New York, was killed in the September hurricane which destroyed his home in Island Park, R. I.

Joseph S. Lord, Sr., head of the carpet wool department of Charles J. Webb Sons Co., Philadelphia, died Oct. 26. He was the dean of the carpet wool trade of this country, having spent 62 years continuously in that business. He began as an office boy with Seville Scofield in 1876. He joined the Webb firm in 1903. His most notable achievement was the development of willowing plants in China to remove from the wool the dirt on which users in this country were then paying a duty of 4¢ per lb. His views of matters related to carpet wools were much sought by the trade and he was the confidant of many carpet manufacturers.

Russell John Hawn, aged 60, vice-president of Monsanto Chemical Co., Birmingham, Ala., died Oct. 14. He was in charge of operations of Monsanto's phosphate division.

Charles D. Taylor, aged 60, for 20 years southern agent for National Ring Traveler Co., Providence, R. I., died in a Charlotte hospital last month. His home was in Gaffney, S. C.

Joseph P. McGrath, aged 64, Atlanta, Ga, secretary and treasurer of the Georgia Manufacturers' Association, died Oct. 1.

Moise Guimont, aged 73, retired overseer of carding of Suncook Mills, died in Concord, N. H., recently.

Joseph E. Carver, aged 67, for many years finishing room overseer at the Troy (N. H.) Blanket Mill, died recently.

Francois Xavier Vanesse, aged 78, for 40 years superintendent of weaving at Wamsutta Mills, died recently in New Bedford, Mass. He had been retired 10 years.

Jacob F. Schaeffer, overseer of spinning at Patterson Mills Co., Roanoke Rapids, N. C., died recently.

Alden B. Heffler, aged 63, prominent dyestuffs manufacturer at Boston, Mass., died in that city on Sept. 27.

Mortimer D. Harrington, for many years overseer of the Berkshire Fine Spinning Co., Fall River, Mass., died in that city on Oct. 5.

Joseph U. O'Down, aged 58, sales manager of Belding-Corticelli Ltd., Montreal, Que., died recently in that city.

Charles E. Spencer, aged 87, retired woolen manufacturer of Naugatuck, Conn., and New Brunswick, N. J., died Oct. 31.

Edward H. Costello, aged 63, supervisor of the spinning department of the Hinsdale (Mass.) Woolen Mills, died recently.

Roy L. Bosworth, aged 51, manager of the Ideal Mfg. Co., Tilton, N. H., died recently in Melrose, Mass.

Here is a complete humidifying system made up in unit assemblies which any master mechanic or plant engineer can install, start up, adjust and keep in A-1 condition—easily, economically. Yet it maintains humidity within close limits over a wide range of operating conditions. The spray heads produce an exceptionally fine degree of atomization at relatively low air pressures . . . positively eliminate precipitation and drip . . . are held to precision standards to assure unvarying spray characteristics. Spraco humidifying systems are used by many of the most prominent industrial organizations in the country.

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T.W.-38

MILL NEWS

Cotton Mill News

Bama Cotton Mills, Enterprise, Ala., recently completed an addition to its plant costing $30,000.

Samoset Cotton Mills, Talladega, Ala. are having their machinery overhauled, aligned and leveled, by the Guillet overhauling system.

Swift Mfg. Co., Columbus, Ga., will soon complete an addition, and other improvements to three of the mill buildings at a cost of $65,000.

Peerless Cotton Mill, Thomaston, Ga., is having 75,000 sq. ft. of new roofing put on the main building.

City Mfg. Co., New Bedford, Mass., has been bought by George H. McFadden & Co., cotton brokers, and will be operated as the Prospect Warehouse Co.

Nashawena Mill, New Bedford, Mass., Unit B, including nine acres of land has been sold to an electrical devices manufacturer.

Neild Mill, New Bedford, Mass., will be sold to the Letts-Anderson group for $80,000 and back taxes. Purchaser plans to operate.

SOULE MILL, New Bedford, Mass., whose 71,000 spindle yarn mill was destroyed by fire on Sept. 28 with loss in excess of $150,000 is operating its weave room two shifts with yarn from stock and purchased. Pending insurance settlement, decision has been deferred as to the future plans.

Brookford (N. C.) **Mills, Inc.,** have awarded construction contract to Boyd & Goforth, 617 North Smith St., Charlotte, N. C., for new hydroelectric power plant at mill to furnish power for mill and mill village. Robert & Co., Inc., Atlanta, Ga., are the consulting engineers.

Robinson Yarn Mill, Dallas, N. C., has completed one-story addition, 40x70 ft., to be used as a warehouse.

Wampum Cotton Mill, Lincolnton, N. C., has been sold by R. S. Abernethy and wife of Winter Haven, Fla., to C. L. Chandler of Gaffney, S. C., and J. A. Moretz of Hickory, N. C., for $36,000.

American Thread Co., Westerly, R I., will discontinue operations at Stonington, Conn., mill damaged by recent hurricane and flood to an amount estimated at $300,000. Available equipment at the plant will be removed to a mill at Fall River, Mass.

Springs Cotton Mills, No. 2, Fort Mill, S. C., is constructing addition 125x175 ft. to carding and spinning departments.

Marie Mills, McColl, S. C., are completing installation of new equipment.

Eureka Cotton Mill, Englewood, Tenn., has sold its equipment and real estate to C. L. Upchurch & Sons, Athens, Ga., who will liquidate the property with an agent on the premises. Plant operated 5,000 spindles and 80 knitting machines. The property was bought from RFC for about $60,000.

Dallas (Tex.) **Cotton Mills** are having the Dixie Spindle & Flyer Co., Charlotte, N. C. equip their steel rolls with the patented Guillet taper fitted roller necks.

American Thread Co. has begun operations of a yarn finishing plant at Bristol, Va., in the plant formerly operated by Mutual Thread Co.

Wool Mill News

Goodall Worsted Co., Sanford, Me., reports a net profit of 51c per share on 72,647 shares of stock for the year ended July 31, compared with $8.47 the previous year.

George H. Gilbert Spinning Co., Gilbertsville, (Mass.,) has been ordered liquidated by Federal Court.

Hampshire Woolen Co., Ware, Mass., has been organized by Fulton Ringe and Parker-Wilder Co., officials, and it has leased the No. 2 mill of the Ware Industries, Inc., and will install 72 new automatic looms.

Ware (Mass.) **Woolen Co.**—While storm repairs are in progress a new 3-story 50x85 ft. building will be erected.

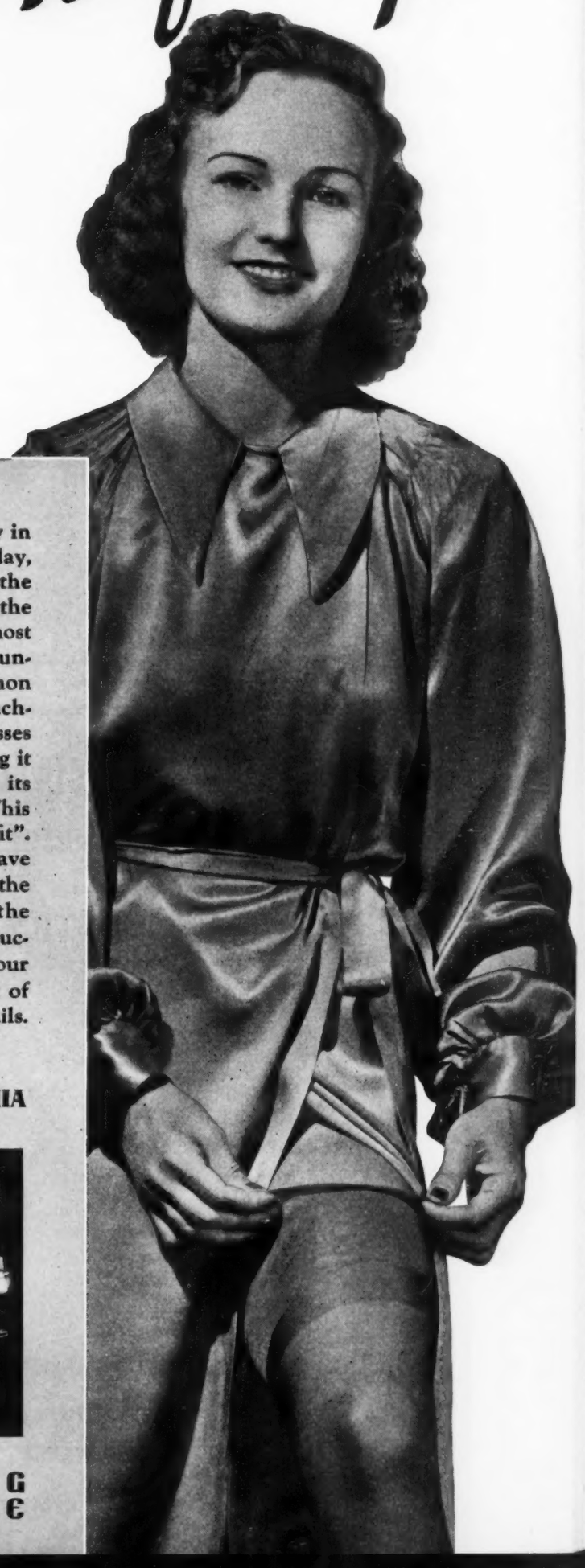
M. J. Whittall Associates, Worcester, Mass.—Sale of this concern to Harry S. Warren of Cleveland and his brother Max S. Warren of Boston for 51c a share of preferred stock or $100,000, has received approval of the court. Property was appraised at $63,442. Warren brothers will apply for a $900,000 RFC loan.

Raylaine Worsted, Inc., will begin operations Nov. 18 in former No. 10 mill of Amoskeag plant, Manchester, N. H. Its woolen-rayon product will be finished in Philadelphia. John Humphrey is president.

Bigelow-Sanford Carpet Co., Inc., New York, N. Y., has closed its cotton yarn mill at Amsterdam, N. Y., permantly, releasing about 180 employees. Company will pur-

"They Fit So Perfectly!"

(And That Means Better Quality)



The consumer is quick to recognize and appreciate extra quality in stockings . . . and when she does, the manufacturer profits. Today, smooth, right-fitting welts are essential to quality hosiery. Yet the welt is perhaps the most troublesome part of the stocking to the manufacturer. Difficulty is frequently experienced by even the most skilled "boarders" in securing a smooth, evenly-finished welt, unstretched, unwrinkled and unshrunk. To overcome this common difficulty, the new Proctor Welt Setter has been developed for attachment to Proctor Automatic Boarding Machines. This device presses the top of each boarded stocking before it enters the dryer, giving it a firm, but gentle, downward thrust, restoring the stocking to its proper length and simultaneously "setting" the entire welt. This greatly enhances the beauty and improves the stocking's "fit".

The Welt Setter* is just one of the many features which have made the Proctor Automatic Boarding Machine famous for the beautiful finish it gives hosiery. Of equal importance is the machine's high rate of production...one 2-boarder machine producing as high as 212 dozen pairs of women's hosiery every 8-hour day. And remember, this machine occupies only 9½ x 11½ feet of floor space. A new 24-page booklet will give you complete details.

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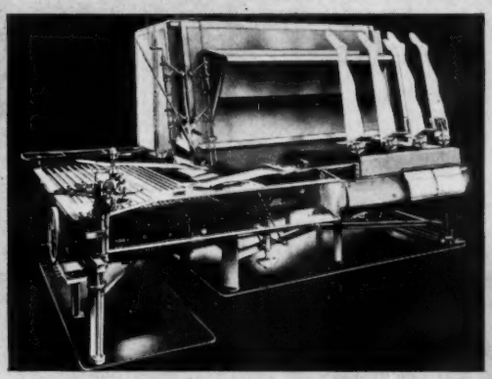
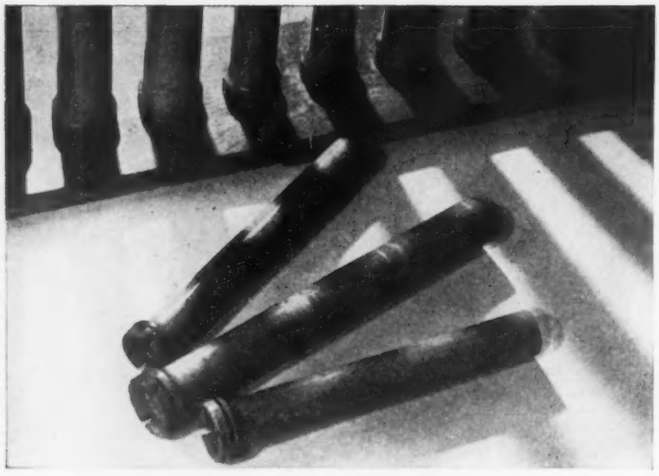


The new Proctor device shown setting welt of boarded stocking just before board enters dryer.

PROCTOR *Automatic* BOARDING MACHINE



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MILL NEWS

chase its yarn requirements in future in the open market for mills at Amsterdam and Thompsonville, Conn.

Caledonia Woolen Mills, Clifton Heights, Pa., was sold at public auction Oct. 19 to numerous buyers. About $300,000 was realized on the machinery and equipment including 250 looms. The real estate was sold Oct. 20.

TILTON (N.H.) WORSTED MILLS, INC., has just been organized, with local capital. George Lincoln, formerly manager of the Canterbury Mills, in Tilton, is treasurer and manager of the new concern. It will manufacture worsteds and gabardines. The plant consists of buildings, occupied until recently by Canterbury Mills.

Southern Worsted Corp., Greenville, S. C., was ordered placed in hands of R. E. Henry as receiver by the court on Oct. 24. Mr. Henry is president of Dunean Mills. Company management will appeal to State Supreme Court.

Cranston Worsted Mills of Collins & Aikman Corp., Bristol, R. I., are making repairs in two local mills, to replace damage caused by recent hurricane, with loss reported in excess of $300,000.

George C. Moore Co., Westerly, R. I., has work under way on repairs to mill, to replace recent damage by flood, estimated at close to $100,000, including equipment.

Lone Star Wool & Mohair Mills, New Braunfels, Tex., plan improvements in local mill, including new machinery and equipment, carbonizing system, water-softening apparatus, boiler plant equipment, etc.; cost over $200,000.

Rayon & Silk Mill News

Wonder Weave, Inc., Bridgeport, Conn., has started operations at 805 Wood Ave. President is H. B. Naramore and treasurer, Tallmadge N. Wakeman. The company is a subsidiary of Bridgeport Fabrics, Inc.

Willimantic (Conn.) **Silks, Inc.,** affiliated with the Corn Spinning Co., same place, has negotiations under way for an RFC loan of $350,000.

Federal Silk Mills, Inc., Williamsport, Md., is constructing an addition 65 x 120 ft. Additional machinery will be installed.

American Viscose Corp., New York, N. Y., has awarded contract to Stephens-Adamson Mfg. Co., Aurora, Ill., for installation of a conveyor system of 38 units at Meadville, Pa., plant; estimated to cost $100,000.

North American Rayon Corp., reports net profit of $343,744 for third 12-week period of 1938. Net for the first 36 weeks was $140,913.

Conrad & Allen, Wayland, N. Y., leased the former Greene Knitting Mill building in Bath, N. Y., and have installed 15 new silk looms.

Glencoe Mills, Burlington, N. C., have awarded general contract to Bryan & Bailey, Burlington, for new one-story addition.

Carter Fabrics Corp., Greensboro, N. C., is erecting an addition, 20,000 sq. ft., to the preparation department on South Elm Street. C. M. Guest & Sons, Greensboro, has the contract, at $25,000.

National Weaving Co., Lowell, N. C., has completed construction of a new one-story addition to mill and will install equipment at once. Expansion represents investment of about $25,000.

Industrial Rayon Corp., Cleveland, Ohio, reports net profit of $301,136 for quarter ended Sept. 30: and for nine months, $180,686.

Galax (Va.) **Weaving Co.** has installed 20 new looms for weaving rayon.

Dragon Mills, a New Jersey corporation, will establish a unit in Roanoke, Va., with a capitalization of $25,000, as the maximum.

Stark Bros. Ribbon Co., New York, will install machinery valued at $125,000 to $150,000 in a new plant at South Hill, Va., for manufacture of rayon ribbon. The company will also operate a similar plant at South Boston, Va. A new building is being erected at South Hill for the new plant.

Knitting Mill News

William Nebel, hosiery manufacturer formerly of Charlotte, N. C., now of Jacksonville, Fla., announces plans for installing 16 hosiery machines in his Jacksonville mill to be removed from one of his Charlotte mills. The Charlotte mills are now headed by his son, Arthur Nebel, as president.

Rodgers Hosiery Mills, Athens, Ga., have awarded contract to Carrier Engineering Corp., Syracuse, N. Y., for air-conditioning system in new addition to mill, now in course of erection.

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1. Precision, high-capacity roller bearing.
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The good performance of SKF Roller Bearing Spindles and SKF Combination Ball and Roller Bearing Tension Pulleys in American cotton and rayon mills reflect more than 25 years' intensive research by SKF engineers and leading textile machinery manufacturers.

Spindles equipped with SKF Roller Bearing Bolsters save up to 25% total input power . . . operate at uniform speeds with lubricating periods between 2,000 and 5,000 hours . . . assure long bolster and tape life.

SKF Tape Tension Pulleys eliminate all drag due to lint, fly and bearing friction . . . insure a uniformity of twist equal to that of SKF Roller Bearing Spindles. This drag reduction amounts up to 10% of the total input power to the frame. There are 18 different standard SKF bolsters and three sizes of SKF Tension Pulleys to meet your specific spinning and twisting requirements for cotton, rayon, silk and wool. Send for Form 247. 4203

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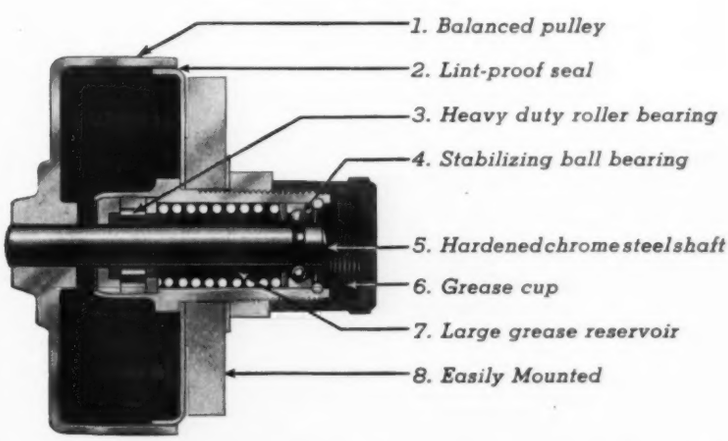
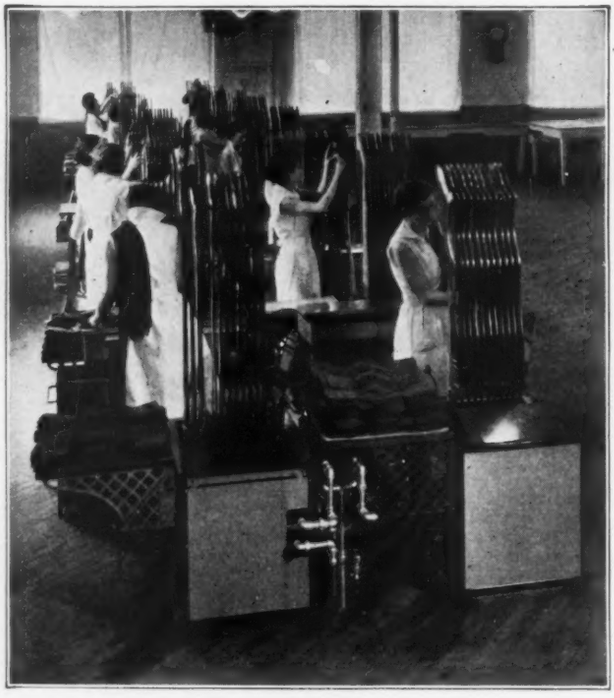


SKF SPINDLES & TENSION PULLEYS

PARAMOUNT DUAL HEAT

1000 DOZENS DAILY

HOSIERY FINISHING



A PRODUCTION in excess of 1,000 dozens full fashioned ladies' hosiery is being finished daily on the 13 PARAMOUNT DUAL HEAT MACHINES operated in this mill during one eight-hour shift—and the character and quality of the work is incomparable since the PATENTED DUAL HEAT principle of drying is positive protection against "baking" delicate silk fabrics. Not only does the PARAMOUNT DUAL HEAT MACHINE contribute outstanding features of production and quality, but it represents—

1. Less investment per dozen
2. A minimum of floor space occupancy
3. Less power and steam consumption per dozen
4. Ideal room and working conditions
5. Less maintenance
6. Ease and comfort to the operator
7. Simplicity and durability of construction

Any one feature alone, of the numerous advantages which the PARAMOUNT DUAL HEAT MACHINE offers, will justify a change to this superior method of hosiery finishing.

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MILL NEWS

Roulette Knitting Mill, Cumberland, Md., was recently bid in by RFC. Cumberland Chamber of Commerce has negotiations under way for the sale of the plant.

Stephens Hosiery Co., Lawrence, Mass., has leased the space in the local Everett Mill Properties, comprising unit No. 15 of Mill No. 1, and will produce men's half-hose.

Wallridge Knitting Mills, Clarksdale, Miss., began operations recently. Plant was moved from Dayton, Tenn., by W. R. Spivey, owner. Infants' and children's hose are made.

Dr. E. J. Martel, Laconia, N. H., is planning a plant to manufacture his arch-supporter stockings.

Union Mills' five plants at Catskill, Hudson, Herkimer and St. Johnsville, N. Y. were sold at auction by Aaron Krock & Co., Worcester, Mass., on Oct. 25 and 26 for $30,000.

Roy Hosiery Mills, Milroy, N. Y., was bought at sheriff's auction by R. H. Thompson for $311 subject to two mortgages of $1,000 and $14,000. Equipment includes 16 leggers and 15 footers. Plant will be operated under name of Thompson Hosiery Mills, Inc.

Aberdeen (N. C.) **Hosiery Mills, Inc.,** newly organized, will engage in manufacturing knit goods, under a capital stock of $50,000, with $300 subscribed by William H. Miller of New York, and J. Talbot Johnson and F. W. McCleur, Jr., both of Aberdeen.

Crystal Hosiery Mills, Aberdeen, N. C., was scheduled to have its new building ready for occupancy Nov. 1. This is a branch factory of Crystal Hosiery Mills, Philadelphia, and is expected to operate 20 full-fashioned hosiery machines.

McCrary Hosiery Mills, Inc., Ashboro, N. C., are installing five additional 54-gage Reading full-fashioned machines and two 45-gage S & S single unit machines.

Graham Full-Fashioned Mill, Inc., Burlington, N. C., is installing additional new machinery, at a cost of about $35,000.

Lasley Hosiery Mills, Burlington, N. C., is a newly established company.

Tower Hosiery Mills, Burlington, N. C., has installed additional machines for manufacture of full-fashioned hosiery.

Cranberry (N. C.) **Knitting Co.** has purchased the equipment of Boyerstown Knitting Co., Bristol, Va., and latter company will discontinue business.

Rogers Hosiery Mills, Inc., Denton, N. C., was recently bid in by C. Bisher, mayor of Denton, for $8,625, at a court sale. He plans to have plant operating by Jan. 1.

Samet Hosiery Mills, Inc., Greeensboro, N. C., on Oct. 21, received charter to manufacture and sell hosiery, with $100,000 authorized capital, with L. D. Whittington, Norman Block and W. C. Holt, subscribing $300.

Davis Full-Fashioned Hosiery Mills, Inc., Greenville, N. C., newly organized will begin operations about the first of 1939. A new mill building will be constructed. The new concern is capitalized at $200,000.

CASWELL KNITTING MILLS, INC., Burlington, N. C., recently organized, have concluded arrangements with the Caswell Development Co., Yanceyville, N. C., to construct a one-story mill, to be occupied under long-term lease. A fund of $50,000 has been subscribed. Leasing company will make an initial installation of 14 full-fashioned machines, with facilities for 24 additional at a later date. Machinery will represent $175,000. Mill is scheduled to be ready early in 1939.

Gibsonville, N. C.: A new full-fashioned hosiery mill is under construction here. Marvin Ferrell, of Greensboro, is said to have controlling interest. Construction is in charge of A. B. and P. L. Kivett, of Gibsonville Development Co.

Piedmont Hosiery Mills, Hickory, N C., are constructing an addition. H. Kiziah has the contract.

Zenith Hosiery Mills, Inc., operated by George Halton and E. W. Saunders, of High Point, N. C., in a new building on English street extension, began operations last month on high grade anklets, with 75 new machines installed.

Amos & Smith Hosiery Co., Pilot Mountain, N. C., is being established by R. T. Amos, president of the Amos Hosiery Mills, High Point, N. C., and associates. New building will cost $50,000, and will contain 21 new 24-section, 45-gage full-fashioned machines. Building contract has been awarded to R. K. Stewart & Son of High Point.

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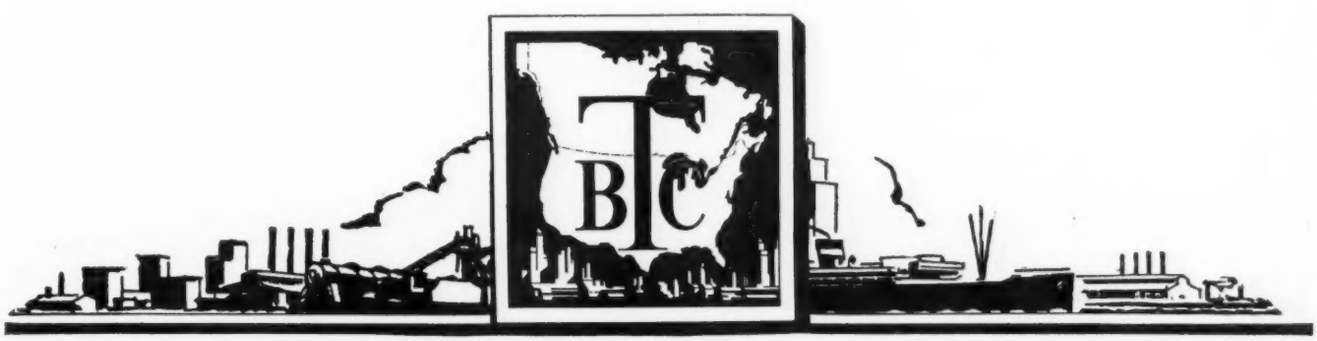

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TALLAPOOSA MILLS
TALLAPOOSA, GA.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

MILL NEWS

Alamac Hosiery Mills, Inc., Reidsville, N. C., new full-fashioned mill, has been put into operation, with 24 machines.

Empire Knitting Co., Philadelphia, sweaters, has removed its plant to Statesville, N. C.

Pilot Full-Fashioned Mills, Inc., Valdese, N. C., is installing four 45-gage single unit machines. The company has erected an addition.

A. Glenn Holt, Yanceyville, N. C., has awarded the contract for construction of a mill building, 142 x 131 ft., to house a full-fashioned hosiery plant.

INFANT SOCKS, INC., Reading, Pa., plans small "neighborhood" mills in eastern locations. The first is being set up at Middletown, Pa.

Dexdale Hosiery Mills, Lansdale, Pa., has had plans completed by Alfred M. Marks, Pittsburgh, Pa., architect, for new mills to be constructed at four Government homestead projects. All mills will be the same size, one-story, 96 x 317 ft., with air-conditioning systems and other modern facilities.

Aberle, Inc., Philadelphia, has been formed to take over H. C. Aberle Co. Harry C. and George F. Aberle have resigned; Gustave Aberle is president of the new corporation and C. R. Van Horn, vice-president.

Ajax Hosiery Mills, Phoenixville, Pa., has disposed of its local mill, closed a year ago, to A. P. deSanno & Son, Philadelphia, Pa., abrasive materials, who will occupy.

Meinig Hosiery Co., Reading, Pa. Liquidation of this company has been ordered by the Federal Court, following the inability to reorganize.

Lumb Knitting Co., Pawtucket, R.I., plant has been sold to Apex Tire, Inc., Providence, for about $22,000.

Adair Hosiery Mills, Clinton, S. C., has been closed and the machinery is being sold. There are 75 knitting machines for men's half-hose and misses' anklets.

Easley, S. C.—W. Frank Wyatt, Burlington, N. C., is at head of a project to construct and operate a one-story mill at Easley on full-fashioned hosiery.

Johnson City (Tenn.) **Mills** have added a full-fashioned department, in which eight 45-gage machine have been installed. The company will continue to operate its seamless department.

Smoky Mountains Hosiery Mills, Kingsport, Tenn., have been purchased from American Lace Co. by Quaker Hosiery Co., Philadelphia. The mill has 38 full-fashioned hosiery machines and auxiliaries.

Newport (Tenn.) **Hosiery Mill** has discontinued operations temporarily. Before the mill reopens in 1939, 65 new machines will be installed.

Holbrook Hosiery Mill, Newport, Tenn, may be moved to Jefferson City, Tenn. A committee is now looking into the matter of a suitable site.

Orange (Va.) **Knitting Mills, Inc.,** recently chartered to manufacture full fashioned hosiery, has awarded contract for 60 x 100 ft. plant to Barnes Lumber Co., Charlottesville, Va. Oscar E. Merkel is president.

Pulaski, Va.—Thomas J. Wallner, head of Virginia Maid Hosiery Mills, Inc., Pulaski, has plans under way for the construction and operation of a group of three new full-fashioned knitting mills in the Southwestern part of Virginia.

Processing Plant News

Fall River (Mass.) **Bleachery** has been sold at liquidation for about $60,000.

Royal Print Works, Fall River, Mass., organized to operate a textile print works in Union Mill No. 3, where space has been leased. Marie B. Percapio is one of the heads.

Textile Dyeing & Printing Co., Fairlawn, N. J., has sold its equipment to Consolidated Products Co., New York. R. L. Gilman is in charge on the premises to direct the liquidation of the complete dyeing, printing and finishing equipment. The real estate is also for sale.

Hersberg's Fine Art Dyeing, Inc., Brooklyn, N. Y., has installed equipment for quantity production after years of hand-dyeing and matching for the trade.

Custom Dye Works, Union, S. C., has been chartered to dye and finish women's hosiery and other goods. Capital stock is $25,000. M. A. Bard is president.

ACME HOSIERY DYE WORKS, Pulaski, Va., has closed bids on general contract for erection of new mill on South Jefferson St. It will cost close to $150,000, including equipment for hosiery dyeing and finishing. Structure will be one-story, 82 x 200 ft. Thomas J. Walner is head. H. V. Biberstein, Charlotte, N. C., is architect.

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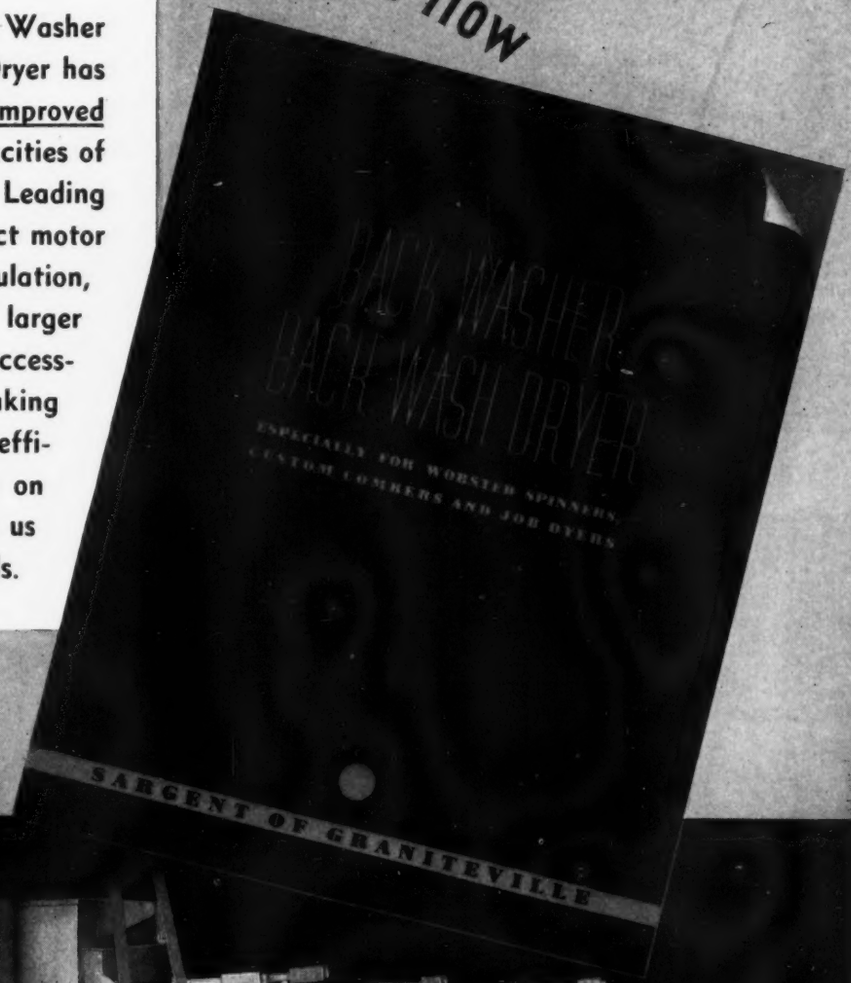
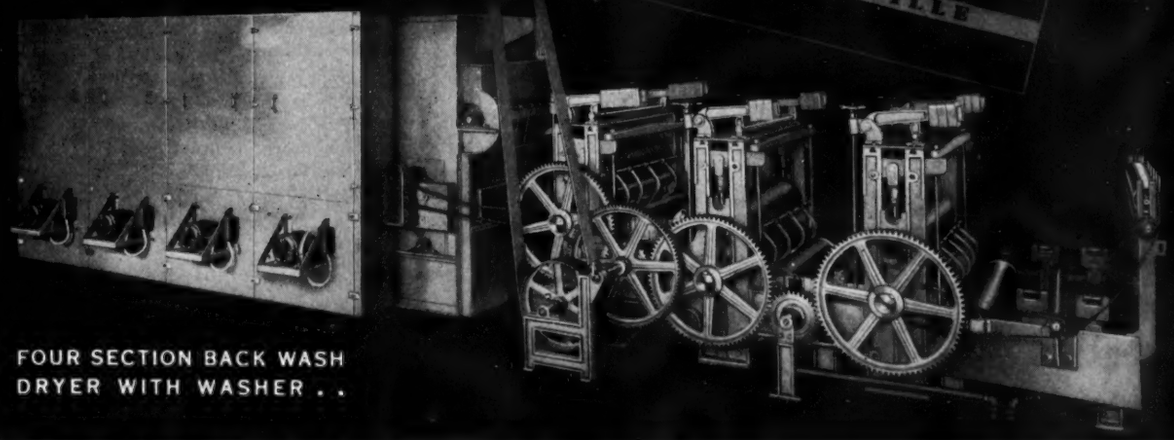
THIS Sargent Back Washer and Back Wash Dryer has been redesigned and improved to handle larger capacities of wool or rayon top. Leading features are . . . direct motor driven fans, better insulation, roller chain aprons, larger bowls, and more accessibility . . . thus making this unit the most efficient and attractive on the market. Write to us now for further details.





FOUR SECTION BACK WASH DRYER WITH WASHER . .

C. G. SARGENT'S SONS CORPORATION. GRANITEVILLE. MASS.

CUT YOUR KNITTING COSTS!

Each month more knitters are learning how

"TASCO"

reconditioning service and knitting machine parts reduce production costs and increase percentage of *first quality product.*

We Manufacture The "TASCO" SINKER With Hardened Throat and Hard Butt. Also other Full Fashioned Knitting Machine Parts.

Our New Patented

"TASCO"

Silk Tension Device

is astonishing the F. F. Hosiery Mills by the remarkable increase in uniformity of fabric obtained by its use.

After five years (1930-1934) of research in local mills and our own factory "Tasco" Knitting Machine Parts and Service were announced to the trade.

"TASCO" STEPS OUT

The sales chart to the right shows the remarkable yearly increase in sales.

THOMAS & SKINNER
STEEL PRODUCTS COMPANY
1119 East 23rd Street Indianapolis, Indiana

DENMAN LOOM PARTS

Pickers, Lug Straps, Holdups, etc.

PROVEN IN PRACTICE

Right in Principle and Price

EXCLUSIVE SALES AGENTS
THE TERRELL MACHINE COMPANY, INC.
CHARLOTTE, N. C.

Water Purification Plants

Designed — Constructed — Guaranteed

By

HUNGERFORD & TERRY, Inc.

CLAYTON, NEW JERSEY

Also **INVERSAND** Zeolite Softeners, Chemical Feeders, De-Oiling Filters and **BASEX** and **HI-BASEX** Greensand Zeolites

FREE FOR THE ASKING

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Lighting Reflectors. RLM Standards Institute. Illustrated book outlines the basic factors in industrial lighting and the basic standards of efficiency, design, and quality of the various types of lighting reflectors bearing the RLM label. Tells how industrial plants can assure themselves of balanced lighting, with economy and durability.

Condensate Pumps. Worthington Pump & Machinery Corp. Bulletin W-318-B15 describes a new line of pumps for removal of condensate under high vacuum, with minimum available submergence. Construction details, dimension tables, and illustrations of the new pumps are included.

Valves. Lunkenheimer Co. This company's entire line of valves, boiler mountings and lubricating devices is included in a new 44-page list price schedule, No. R-1.

Steel Lockers. Lyon Metal Products, Inc. The new line of Lyon steel lockers is described in detail and illustrated in Catalog No. 233-C. Included are data on construction, sizes available, etc.; also a short section devoted to folding chairs, cabinets, and other metal industrial products.

Pipe. Republic Steel Corp. 10-page pamphlet, No. Adv. 316, contains bundling tables, data on sizes and weights, and identification and corrosion information concerning pipe manufactured by Republic.

V-Belts. Gates Rubber Co. September issue of *Industrial News* contains article on installation of company's equipment on spinning frames in a Pennsylvania mill.

Textile Machinery. Saco-Lowell Shops. August issue of *Saco-Lowell Bulletin* contains articles describing a new slasher for woolen and worsted yarns, Parts 2 and 3 of a symposium on "The Best Roll-Covering Material," and other information of considerable interest to textile men.

Instruments. Bristol Co. Bulletin No. 515 illustrates and describes various models of this company's Metameter system of telemetering available for remote measurement and automatic control of pressure, vacuum, liquid level, temperature, flow, voltage, current, load, and totalized power load.

Counting Equipment. Durant Mfg. Co. Illustrated mailing piece describes and pictures numerous of this company's products for specialized counting jobs. Included are photographs of pick counters, printing and reeling counters, yardage counters, and rotary counters for spinning and twisting equipment.

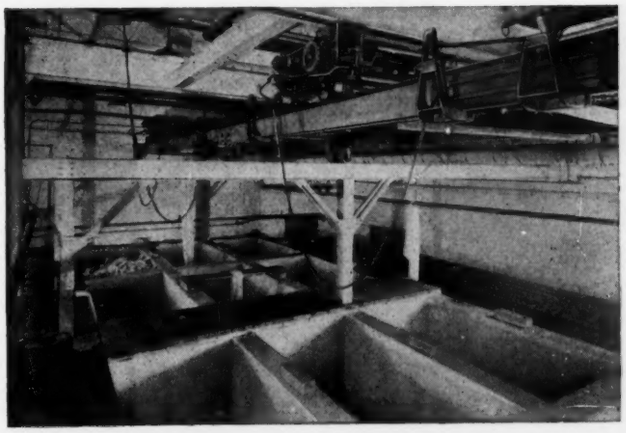
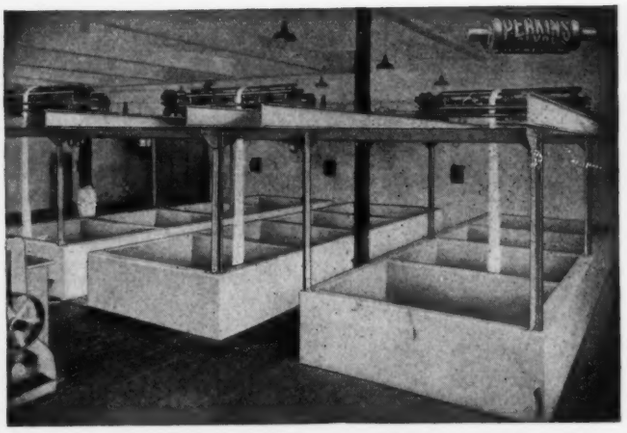
Stainless-Steel Equipment. S. Blickman, Inc. Four-page folder describes and illustrates company's products, including such items as agitating tanks, dye boxes, dye reels, dry cans, fabric trucks, etc.

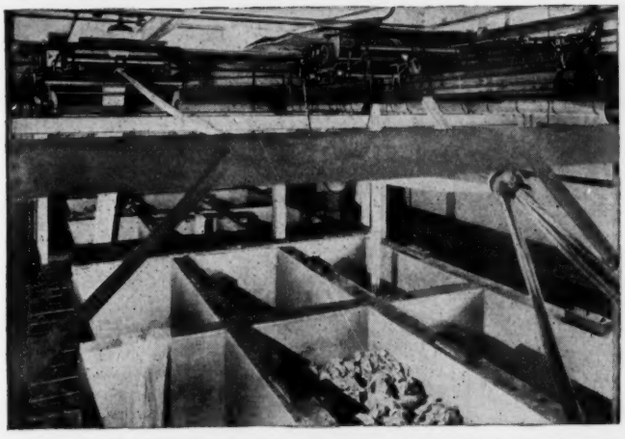
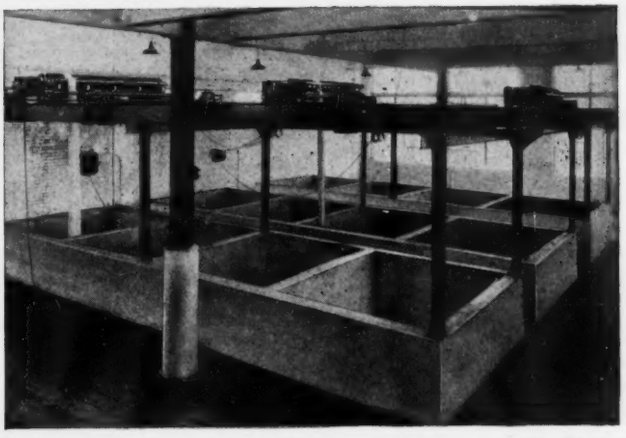
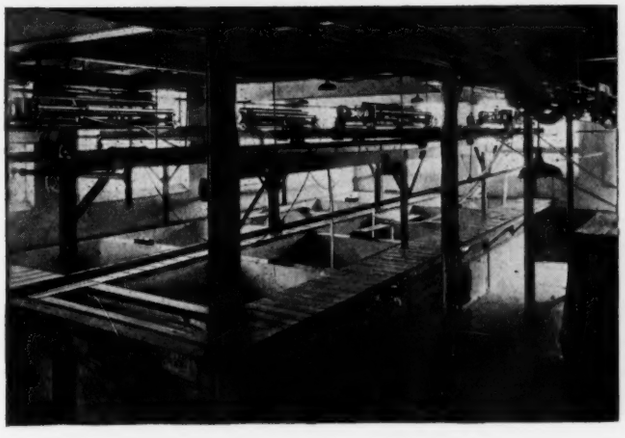
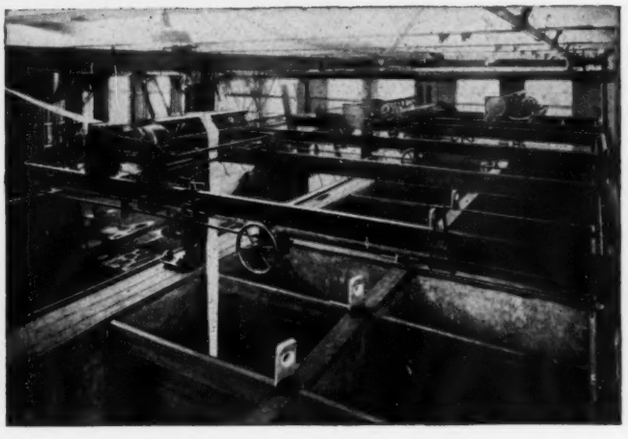
Dyes. National Aniline & Chemical Co., Inc., September issue of *Dyestuffs* contains articles on "The Canvas Disk Wetting Test;" shoe, leather, and glove colors for spring 1939; etc.

Roving Frames. Whitin Machine Works. 76-page volume contains technical information on operation and maintenance of Woonsocket Model roving frames. Numerous diagrams, tables, etc., are included in this comprehensive, authoritative study.

Soldering Equipment. Ideal Commutator Dresser Co. 12-page pamphlet, No. TG515, describes and illustrates company's complete line of electric soldering tools, showing typical examples of uses to which various types are adapted.

Humidification. Parks-Cramer Co. September issue of *Parks' Parables* contains article entitled "32 Years with Turbo Humidifiers," which describes

PERKINS BIN PILERS. These automatic machines eliminate hand labor and losses due to soilage, and snarling or knotting. They pay for themselves in less than two years.

Typical Perkins Bin Piler Installations:—

Appleton Company.
Apponaug Co.
Arkwright Corporation.
Arnold Print Works.
Aspinook Corp.
Bellman Brook Bleachery.
Cannon Mills Co.
Chicopee Manufacturing Corp.
Clearwater Manufacturing Co.
Columbia Mills, Inc.
Cranston Prints Works Co.
Crystal Springs Bleachery
Dan River Cotton Mills.
Danvers Bleachery.
Defiance Bleachery.
Delta Finishing Co., Inc.
Dodgeville Finishing Co.
Dutchess Bleachery, Inc.
East Lyme Bleachery.
Erwin Cotton Mills Co.
Fall River Bleachery.
Glenlyon Print Works.
Hampton Co.
Johnson & Johnson, Inc.
Kerr Bl. & Fin. Wks., Inc.
Lewiston Bl. and Dye Works.
Lincoln Bl. & Dye Works.
Liondale Bl., Dye & Pr. Wks.
Millville Mfg. Co.
Montreal Cottons, Ltd.
Morgan & Hamilton.
Mt. Hope Finishing Co.
Nashua Mfg. Co.
No. American Lace Co.
North Carolina Finishing Co.
Pacific Mills (Lawrence, Mass.)
Pacific Mills (Lyman, S. C.)
Pontiac Bleachery.
Providence Dy., Bl. & Cal. Co.
Proximity Mfg. Co.
Quaker Lace Company.
Queen Dyeing Co.
Rock Hill Print. & Fin. Co.
Rockland Finishing Co.
Rosemary Manufacturing Co.
Sayles Biltmore Bleacheries.
S. Slater & Sons, Inc.
Slatersville Finishing Co.
Standard Bleachery Co.
Sterilek Co., Inc.
Stevens Linen Works.
Thomaston Bleachery.
Union Bleachery.
United States Finishing Co.
Utica Willowvale Bleaching Co.
Waldrich Bleachery.
Western Shade Cloth Co.
Wilkes-Barre Lace Mfg. Co.

B. F. Perkins & Son, Inc., Holyoke, Mass.

For Unusually Smooth Textile Finishes

Try

"COLLOIDAL KAOLIN"

or

"FRANKLIN CLAY"

These two grit free inerts have been adopted by a number of the largest mills whose products call for exceptionally SMOOTH NON-ABRASIVE filling agents. Both reasonably priced. Shipped in airfloated form in heavy paper bags.

Residue on 300 mesh 0.3%

Laboratory testing samples are yours for the asking

UNITED CLAY MINES
CORPORATION
General Offices • Trenton, N. J.

Humidity

• Automatically Controlled
• Regain Maintained
• Static Troubles Eliminated
• Satisfaction Guaranteed

Write for Information

SOUTHWORTH MACHINE CO.
PORTLAND, ME. U.S.A.

When You See This Slug—

See Also
Textile World
Year Book and Catalog

in an advertisement in any textile magazine it means that the manufacturer is referring you to an additional source of data concerning his products or services. He is inviting textile mill men to "look it up" first in the new edition of the

Textile World Yearbook and Catalog

FREE FOR THE ASKING

(*Continued from page* 126)

development and operation of this type of equipment.

Stream Pollution. Niagara Alkali Co. September issue of *The Pioneer* contains article outling methods by which Greensboro, N. C., hopes to solve the problem of treatment of textile wastes.

Corrosion-Resistant Metal. International Nickel Co., Inc. 16-page bulletin, No. T-7, describes and illustrates properties and uses of Inconel, a corrosion-resisting alloy manufactured by this company.

Looms. Compton & Knowles Loom Works. Vol. 6 of *C. & K. Photo News* contains illustrated articles describing loom manufacture, mill modernization programs, C. & K. at the World's Fair, etc.

Microtomes. Bausch & Lomb Optical Co. Catalog D-16 describes and illustrates various types of Microtomes, and accessories for use in connection with them. Included is a price list of the articles described in catalog.

Winding and Twisting Equipment. Atwood Machine Co. September issue of *Atwood Twists* cleverly compares the hurricane of last September to "another hurricane that blew 2,000 parts off the twister," and continues with a description of recently introduced Atwood UniRail twister.

Diesel Engines. Ingersoll-Rand Co. Catalog 10110 describes and illustrates Type S diesel engines for heavy-duty, continuous-service, stationary or marine-electric application.

Cotton. Wellington Sears Co. Large-size, illustrated folder entitled "Facts about Cotton," contains information and data covering the growing of cotton and the manufacture and distribution of cotton products.

Metal Flooring. Snead & Co. Bulletin describes and illustrates application of company's Armor Grids in driveways, traffic aisles, ramps, platforms, and other areas in textile mills; contains section showing ease with which the grids can be installed.

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Sewing Equipment. Union Special Machine Co. October issue of *The Needle's Eye* contains articles on sewing equipment at the Simmons Co. plant in San Francisco, a description of the beginning and development of the Jantzen Knitting Mills, and other articles of interest to users of sewing machines.

Weathering Tests. South Florida Test Service. Leaflet describes company's facilities for making weathering tests of all kinds; lists twelve types of textile fabrics tested in recent years.

Building Construction. Lockwood Greene Engineers, Inc. Vol. VIII, No. 1, of *The Engineer* describes photographically various construction programs which have been engineered by this organization; included are several textile mills.

Standardized Bearings. Bunting Brass & Bronze Co. Catalog No. 39 describes and lists company's products in the fields of ready-made standardized bearings, cored and solid bars of bronze bearing metal, and other products of a similar nature.

Pumps. Decatur Pump Co. Bulletin No. 115 describes and illustrates company's straight and self-priming, semi-industrial pumps.

Floor Resurfacing. Flexrock Co. Leaflet describes manner in which concrete floors break out, and tells how to repair them with company's product. Included are illustrations of the use of this product in two textile mills.

Thirty Years Ago

Parts on Draper Looms Were Filed and Fitted

As the Looms were being Built—in accordance with the Then Prevailing Practice in the Building of Nearly All Textile Machinery

Today

Draper High Speed Looms Are Built from Standardized Castings

That Are Finished to Fit Before Leaving the Machine Shop ✧ That is One Reason Why Your Weavers Can Run More Looms ✧ Why Your Fixers Can Care for More Looms ✧ Why the Looms Run Faster ✧ Why they Weave More Cloth and Better Cloth

You Can Bring Back the Weave Room Conditions of 30 Years Ago

With its Less Efficient Looms by Using Repair Parts that are Not the Equal of Draper Standardized Parts

Keep Your Looms as Good as New

With Up-to-date Draper-made Parts

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

FOR TODAY'S TEXTILE MILLS...

THERE IS NO MORE *Practical Flooring*

THAN NORTHERN HARD MAPLE

Scores of years have passed since the first Hard Maple textile mill floor was laid—years in which countless plants have proved this flooring does not disappoint. And today, more than ever, Hard Maple is the logical choice.

For here is a flooring that is "right" for workman and right for employer. To management, it brings a remarkable record for durability, remarkably low costs per year of service—for installation, for cleaning, for maintenance. Again, its smoothness speeds up traffic; it simplifies alterations, machinery shifting and renewal; it creates no dust to injure the delicate bearing surfaces of modern machinery.

But here also, is a flooring in step with 1939's regard for workers' liking for their jobs. Hard Maple is warm, dry and resilient—clean and highly sanitary—light-reflecting and sound-absorbing. It slows up fatigue, protects health, pleases the eye—in every way contributes to workers' comfort, workers' efficiency, workers' good will.

Nature has endowed Hard Maple with a special response to *all* the modern conditions of doing business. Here is a flooring which checks on *every* count, which matches satisfaction in *use* with satisfaction in ultimate *cost*. Before you build or remodel, consider *all* the factors and see how modern is Maple's answer. Your architect can give you full information about floors of **MFMA*** Northern Hard Maple, in strips or blocks.

• • •

See our catalog data in Sweet's, Sec. 11/76. Write for folder describing heavy-duty finishes for old or new floors, which seal Maple's surface and further reduce cleaning costs.

Northern Hard Maple floor in Grahur Silk Mill, at Graham, N. C.

***To be sure of Association guaranteed grading, specify and look for the MFMA trademark (indented and stamped). The following manufacturers are licensed to use it:*

•

Beck, August C. Co., Milwaukee, Wis.
Brown Dimension Co., Manistique, Mich.
Bruce, E. L. Co., Memphis, Tenn. (Mill at Reed City, Mich.)
Connor Lumber & Land Co., Laona, Wis. (Sales Office, Marshfield, Wis.)
Farrin Lumber Co., M. B., Cincinnati, O.
Holt Hardwood Co., Oconto, Wis.
Kerry & Hanson Flooring Co., Grayling, Mich.
Kneeland-Bigelow Co., Bay City, Mich.
Kneeland-McLurg Flooring Co., Phillips, Wis.
North Branch Flooring Co., Chicago, Ill.
Oval Wood Dish Corp., Tupper Lake, N. Y.
Robbins Flooring Co., Rhinelander, Wis.
Stephenson Company, I., Wells, Mich.
Wells, J.W. Lumber Co., Menominee, Mich.
Wisconsin Land & Lbr. Co., Hermansville, Mich.
Yawkey-Bissell Lumber Co., White Lake, Wis.

Floor with
MFMA Maple

NORTHERN HARD

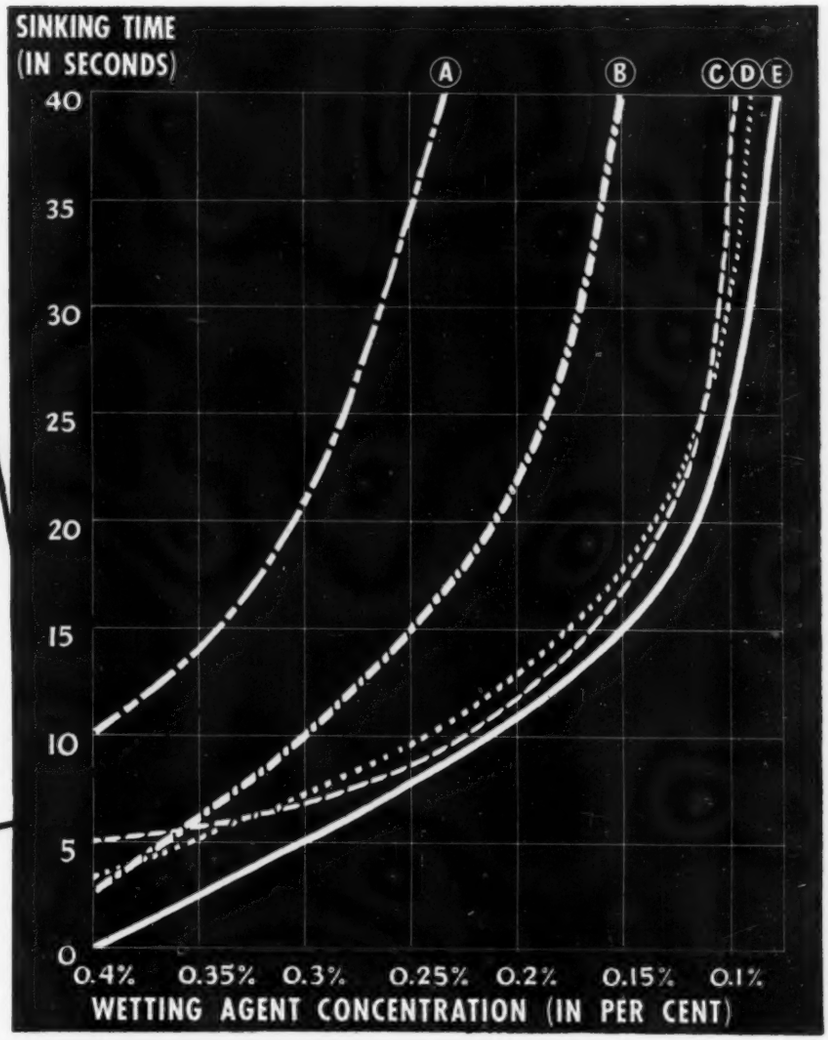
MAPLE FLOORING MANUFACTURERS ASSOCIATION

1793 McCormick Building, Chicago, Illinois

WETTING-OUT COMPARISONS

Method of
CARL Z. DRAVES

A An Alkyl Aromatic Sulphonate
B A Soluble Pine Oil
C A Sulphated Ester
D A Sulphated Alcohol
E WETSIT, conc.



INSTANT WETTING-OUT

● Wetsit saves time in processing, reduces the cost of detergents and assures an improved and more uniform finished product.

The instantaneous wetting properties of Wetsit aid in such processes as scouring, bleaching, fulling, dyeing, yarn conditioning, sizing, sanforizing, rinsing, etc.

Wetsit is a new synthetic compound which reduces surface tension in water solution—giving complete penetration. Wetsit also has emulsifying, dispersing and detergent properties. Wetsit is not affected by the lime and magnesium salts of hard water—it is equally efficient and gives abundant foam in neutral, acid or alkaline conditions. If used with soap Wetsit prevents the formation of lime curds. When dissolved in water it does not hydrolize to give free alkali.

Wetsit displays great surface activity in concentrations as low as 0.1% which assures rapid wetting, complete penetration and level or uniform results.

FREE—Write today for samples.

Reduced surface tension — complete penetration

with WETSIT

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.
WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.

ADVERTISING LOGIC

A Monthly Talk on Advertising for Textile World Readers

Your Business News

News of what the mills of the country are doing—news of the trends in the industry—news of developments throughout the world which affect the textile industry—news of *new* machines or supplies—news of men and methods—

you find in the reading pages.

News of the manufacturers serving the industry—news not only of new products—but of the success obtained by mills using those products—news of improvements—of how mills saved money—or produced better goods—or improved working conditions through the use of specific equipment or material or method—

you find in the advertising pages.

TEXTILE WORLD advertising pages are filled with the kind of useful information which is designed to help you in your business.

No advertisements of services, or devices, or commodities designed for purely personal use are published in your business paper, regardless of how good they may be or how valuable from a purely personal angle.

Your business paper is a business tool and every advertising page in it therefore contains a page of "business" information for you—a page which may contain an idea which will help you—to save expense—to cut production costs—to improve product—just as advertising pages after advertising pages have helped others who have adopted the suggestions made by advertisers.

The advertising pages, in other words are "Business News" pages.

Thus every Textile World reader who is as constant a reader of the ad pages, as he is of the editorial pages, is best informed on all of the important things which are happening in his industry—among the mills—among the manufacturers serving the mills.

And so, is in best position to run his mill in the way which will assure a leadership place in this day of keen competition.

He is in effect—*completely* informed on the things pertaining to his business—

Are you?

WHETHER YOU MAKE OR BUY YARN DYED STYLE FABRICS OUR
MULTIPLIED EXPERIENCE
CAN HELP YOU
SPECIALISTS IN PACKAGE DYEING SINCE 1910

FRANKLIN PROCESS has four yarn dyeing plants (with yarn departments), one in each major textile area, and each plant is a completely self-contained unit under local management. Nevertheless since these plants can freely exchange information, the experience of any one plant can become the experience of all four plants, at will.

This MULTIPLIED EXPERIENCE is one of the PLUS values in Franklin Process Service. It is unique and its importance is best appreciated in light of the fact that in some years the total Franklin Process yarn dyeing production is over 17,000,000 lbs.

The dependable fastness, extra brightness, thorough penetration and wide acceptance of Franklin Process Colors make them an asset to those who buy yarn-dyed style fabrics for resale. These same qualities plus ready availability, suitability of colors for finishing, and the economy of the Franklin Package also induce a majority of fancy goods mills to depend on Franklin Process Service.

Whether you make or buy for resale yarn-dyed style fabrics, why not take advantage of our MULTIPLIED EXPERIENCE by specifying Franklin Process Yarns or Yarn Dyeing?

Franklin Process

Natural Yarns *Colored Yarns* *Glazed Yarn*
Dyeing and Processing Machines
PROVIDENCE • PHILADELPHIA • GREENVILLE
CHATTANOOGA
CHICAGO REPRESENTATIVE, 100 WEST MONROE STREET
NEW YORK REPRESENTATIVE, 40 WORTH STREET

THE FRANKLIN PACKAGE

Its firm wind and square corners make it an excellent supply (overend or rotating) for high speed or low speed warping and for other winding operations.

STALEY'S •TEXTILE• STARCHES

A. E. STALEY MANUFACTURING COMPANY

DECATUR, ILLINOIS

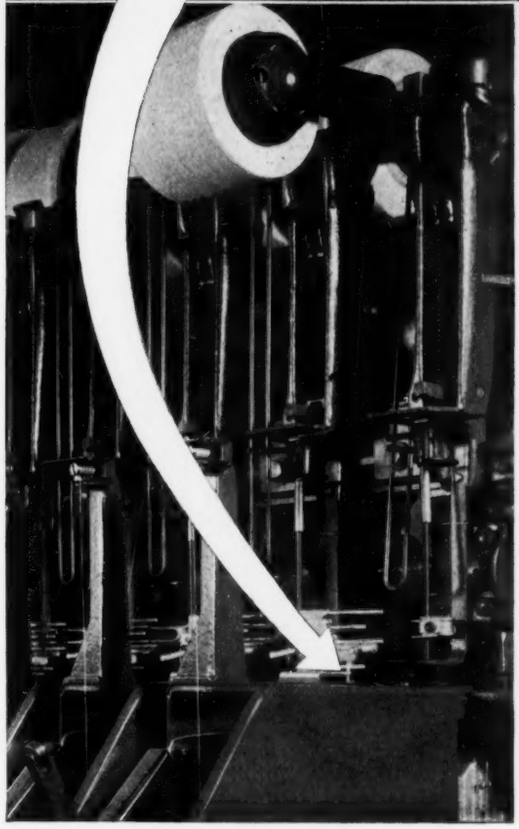
ATLANTA
SPARTANBURG

PHILADELPHIA
SAN FRANCISCO

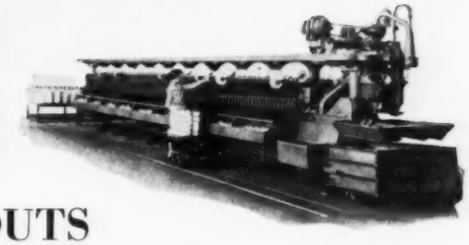
DALLAS
CHICAGO

NEW YORK
BOSTON

IMPROVING QUALITY



AUTOMATIC SPOOLER



REMOVES GOUTS with Breaker-Type Snick Plates

The yarn, running from the bobbin to the cheese, passes between a spring-mounted, angle-set, adjustable, knife-edge snick plate and a fixed plate. The snick plate may be set to perform any required amount of cleaning. Gouts, slubs, or other similar yarn imperfections, are caught and stopped instantly and automatically, breaking the yarn above the gout. Ultimate result—UNIFORMLY HIGH QUALITY WOVEN GOODS. An *exclusive* feature of the Barber-Colman Automatic Spooler.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A.
GREENVILLE, S. C., U. S. A.
MANCHESTER, ENGLAND
MUNICH, GERMANY

SAFE

IN THE BOIL-OFF *because* IT ASSURES CONTROLLED DEGUMMING

CONTROLLED degumming—that's the secret of turning out complaint-proof silk hosiery and knit goods. And you're **sure** of controlled degumming when you use Olate in the boil-off.

For this pure, neutral, low titer soap has a high factor of safety. Its extremely low rate of hydrolysis—the slow release of its alkalinity—assures mild action on the delicate silk fibers, uniformity of results. Throughout the degumming operation, its action is always under control.

It's safe, too, in the rinsing operations which follow. For Olate's low titer means fast, thorough rinsing—even at the relatively low temperatures necessary for protecting shades. Its quick, thorough rinsing qualities protect against the formation of spots—a frequent trouble-maker resulting from fatty substances being carried over into the finishing bath. And Olate's splendid lubricating properties help to prevent broken or chafed filaments.

All down the line, you'll find Olate's safety a real asset—a real economy. A test in your plant will prove it.

Procter & Gamble
Cincinnati, Ohio

Olate · *the universal textile soap*

HERE AT LAST... *Controlled* *LUBRICATION*

TO KEEP BALL AND ROLLER BEARINGS performing as they should, *controlled* lubrication is necessary. This results from the use of Texaco Starfak.

Texaco Starfak is stable—doesn't break down, separate, or leak out; it stays in the bearing, effectively sealing it against foreign matter.

Trained lubrication engineers and 2186 warehouses are at your service. Phone the nearest one, or write:

The Texas Company, 135 East 42nd Street, New York City.

BALL and ROLLER BEARING BOOKLET

Just off the press. 44-page treatise on the construction, installation, and lubrication of ball and roller bearings. Write for your copy.

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

TEXACO *Starfak Grease*

FOR SMALL HIGH-SPEED BALL AND ROLLER BEARINGS

GREETINGS!

AS WE approach the close of a year that has perhaps lived up to what many expected of it—that has contained periods of optimism and of promise, as well as times of perplexity and disappointment—we grasp this opportunity of extending to friends and customers our very best wishes for a pleasant Holiday Season, filled with happy gatherings, replete with good cheer, and blessed with the kindly spirit of Christmas Day.

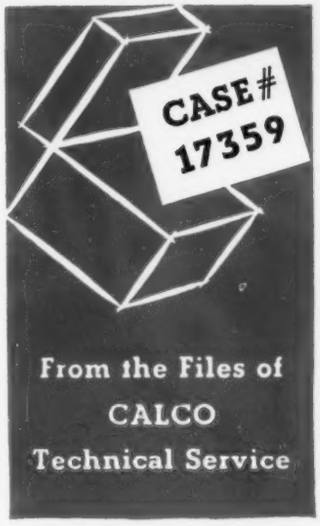
For the year that is past, and the years that have preceded it, we express our sincere gratitude and thanks to the textile trade for the business with which we have been favored and for the confidence which they have placed in us. May we merit a continuance of both.

For the New Year that approaches we wish for everyone all the success, and as many of the good things of life as he is entitled to gather unto himself, honestly, and "within the spirit of the Constitution"

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

Charlotte, N. C. Atlanta, Ga.



Railroad Upholstery Gets the Works . . .

BUT CALCO DYES CAN TAKE IT!

One of the most important "musts" for railroad upholstery is the ability to withstand daily exposure to sunlight—and the periodic onslaughts of energetic cleaning crews.

For help in meeting these strict requirements, a manufacturer called on Calco's Technical Service Division. On-the-spot study of his processes and materials developed practical suggestions for the application of Calco dyes to this particular problem. As a result, the finisher was enabled to deliver to *his* customer a fabric noticeably improved in fastness to light and alkali.

This is but one of many instances where Calco's Technical Service has been of practical help in time of need. This service is available to any user of dyestuffs without cost or obligation. Perhaps it can help you make a profitable operation out of some difficult assignment—or to bring greater economies to your production of high-quality products. Simply write or wire our main office or nearest branch office, and a member of our technical staff will be sent promptly, and without obligation, to talk over your problems with you.

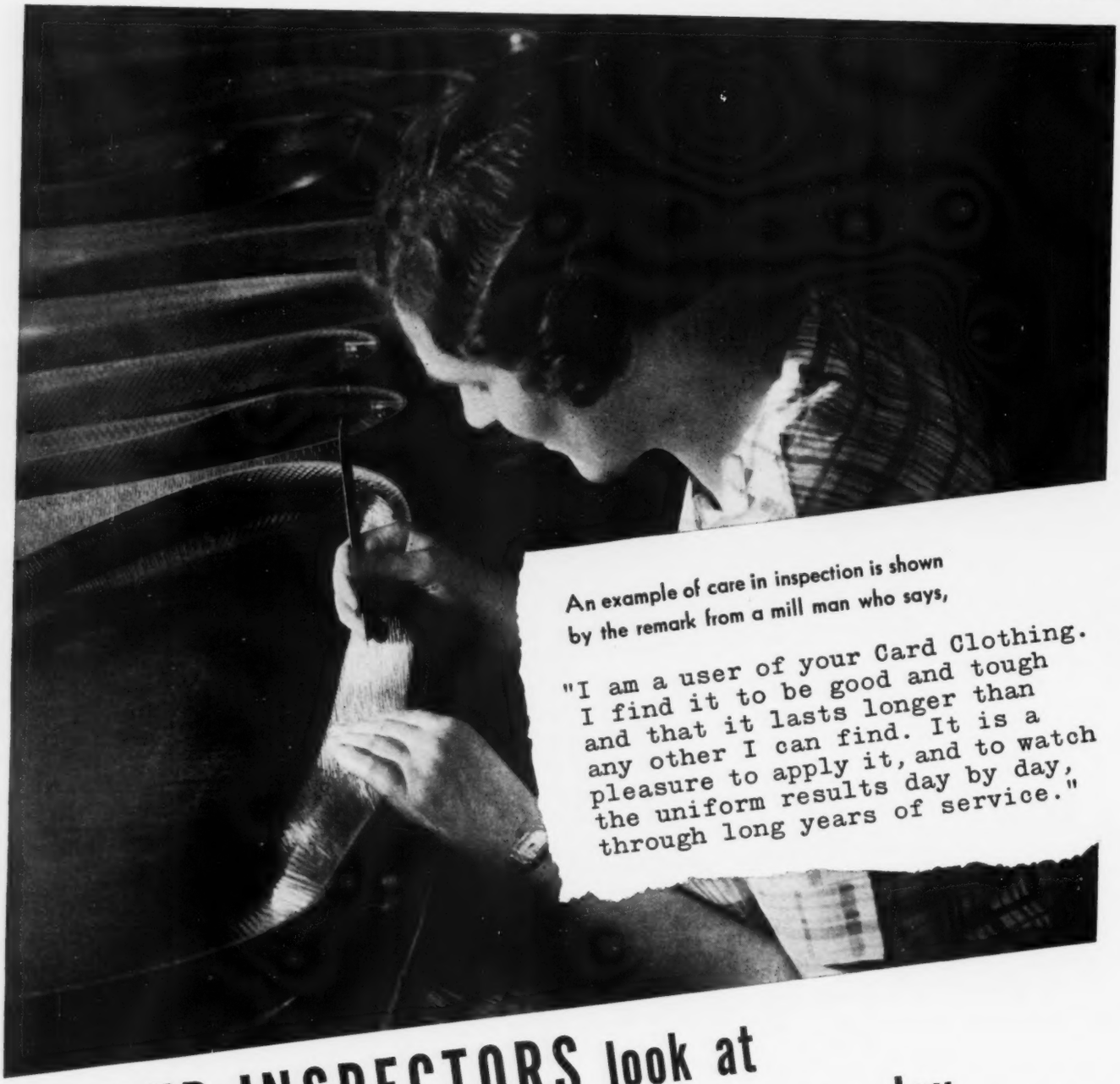
CALCO DYES ARE BETTER BUYS

THE CALCO CHEMICAL COMPANY, INC. · BOUND BROOK, NEW JERSEY

Calco

A DIVISION OF AMERICAN CYANAMID CO.

BOSTON · PHILADELPHIA · PROVIDENCE · NEW YORK · CHARLOTTE · CHICAGO · PATERSON



An example of care in inspection is shown by the remark from a mill man who says,

"I am a user of your Card Clothing. I find it to be good and tough and that it lasts longer than any other I can find. It is a pleasure to apply it, and to watch the uniform results day by day, through long years of service."

TUFFER INSPECTORS look at over 2 Miles of Card Clothing every day . . .

As a final precaution every inch of Tufferized Card Clothing is inspected before delivery to you. New Tufferized Precision Parts cut the wires free from wire burrs and make every staple seat squarely and firmly into the famous, patented foundation. Wires are straight and exactly the same length as well as uniformly spaced. When attached to your drums they remain in correct position, set firmer and lay flatter to insure more even setting of the rolls. Write for more detailed information about Tufferized Card Clothing.

TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Branch Offices: Philadelphia, Dallas

Southern Plant: 244 Forsythe St., Atlanta

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 Inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

LINT-FREE

THAT MEANS MORE "Mileage" FOR WESTINGHOUSE MOTORS

Protection against lint in the motors that drive your spinning frames, roving frames and other cotton textile machinery is insurance for your production schedules.

Westinghouse motors have these four provisions to insure them — and you — against "lint trouble:"

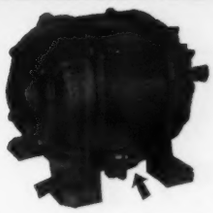
1. Specially tapered rotor vanes, against which lint cannot pack, and which circulate air at a velocity that will remove lint.
2. Glass-smooth windings prevent lint from clinging.
3. Large air passages.
4. No screens to require cleaning.

Thermoguard Protection, making motors self-protecting against overheated windings, can be applied to lint-free motors.

For complete information on these and other time-proved advantages of Westinghouse Lint-Free Motors, call your nearest Westinghouse Office or Industrial Agent.

WESTINGHOUSE ELEC. & MFG. CO.
East Pittsburgh, Pa.

Dependable drive for textile machinery — Westinghouse Lint-Free Motors and "De-ion" Linestarters.



Loom Motors—extra strength, high efficiency, readily accessible oilers, long-life bearings.

WK — 18 Starter — Guards loom motor against overload damage. Safely and quickly reset.

"De-ion" Combination Linestarter — "De-ion" Motor Starter and Nofuze circuit breaker combined in one compact enclosure.

J-20593

FROM POWER LINE TO DRIVEN MACHINE YOU ARE ALWAYS SURE WITH **Westinghouse**

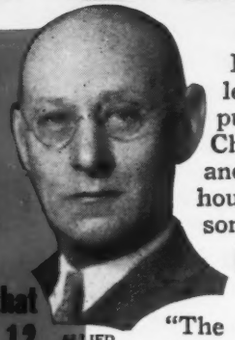
MOTORS • CONTROL • CIRCUIT PROTECTIVE EQUIPMENT

NINE YEARS IN A DYE HOUSE!

Another true case history from the Allis-Chalmers files that proves **"IT PAYS TO BUY THE EQUIPMENT THAT PAYS FOR ITSELF!"**

THE SERVICE RECORD OF AN ALLIS-CHALMERS MOTOR AND TEXROPE DRIVE

Here's the Sensational Story of an Allis-Chalmers Motor and Texrope Drive as told by P. W. Eshelman, president, Wilkes Hosiery Mills Co. Read How This Motor Stood Up under Conditions that Wrecked Ordinary Motors in 12 Months! Learn How You Can Cut Maintenance Costs . . . with the Equipment that Pays for Itself!



If you want to learn about equipment that cuts operating costs . . . if you want to hear of motors that stand up *nine times* as long as ordinary ones . . . then read this sensational performance story that P. W. Eshelman tells about his experience with an Allis-Chalmers "Lo-Maintenance" Motor!

Mr. Eshelman is president of the Wilkes Hosiery Mills Co., North Wilkesboro, N. C. In his plant, near the ceiling of the dye house, a motor must be installed to operate a line of open paddle type machines. Operating conditions . . . moisture, heat, and fumes . . . are adverse—so adverse that ordinary motors lasted only 12 to 14 months!

Then came the "Lo-Maintenance" motor that made news!

"In June, 1929," said Mr. Eshelman, in his unsolicited letter of July 5, 1938, "we purchased a standard Allis-Chalmers vapor-proof motor and installed it in our dye house. This week we made some repairs to the building.

In Perfect Condition . . . After Nine Years!

"The motor was completely dismantled for examination and cleaning *for the first time* since it was installed! And it was in perfect condition . . . after nine years of uninterrupted service!"

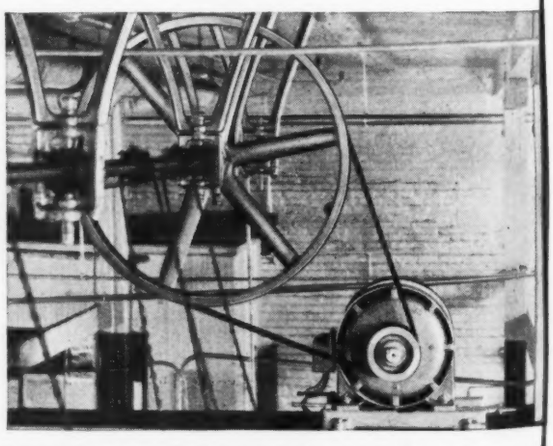
But that's not the only equipment that made news at Wilkes Hosiery Mills. At the same time the motor was purchased, a set of Allis-Chalmers Texrope Drives was installed in the dye house, where other drives lasted less than two years.

"That original set of v-belts on the Texrope Drive," wrote Mr. Eshelman, "was taken off at the same time, having completed over nine years of service without breakage or decomposition under the conditions mentioned. And our foreman believes they would have given one or two more years of service had they been left on!"

Put Allis-Chalmers To Work For You!

No wonder that Mr. Eshelman has equipped his entire plant with Allis-Chalmers Motors and Texrope Drives! No wonder that other informed executives all over the country specify Allis-Chalmers equipment. They know the service records that Allis-Chalmers equipment sets . . . the savings in production costs that it makes possible. They know it's the equipment that pays for itself!

In your plant, there's work that Allis-Chalmers can do for you. Find out about it. In the nearby Allis-Chalmers District Office is a production engineer, ready to put 90 years of engineering experience to work for you . . . with the equipment that pays for itself!



"WE DID NOT WRITE YOU," said Mr. Eshelman, "with the view of securing any publicity. We were so well pleased with the service obtained from this installation that we just felt like telling you about the excellent service your equipment gave us." The installation picture is an actual photograph of the Allis-Chalmers motor and drive in the dye house at Wilkes Hosiery Mills Co.

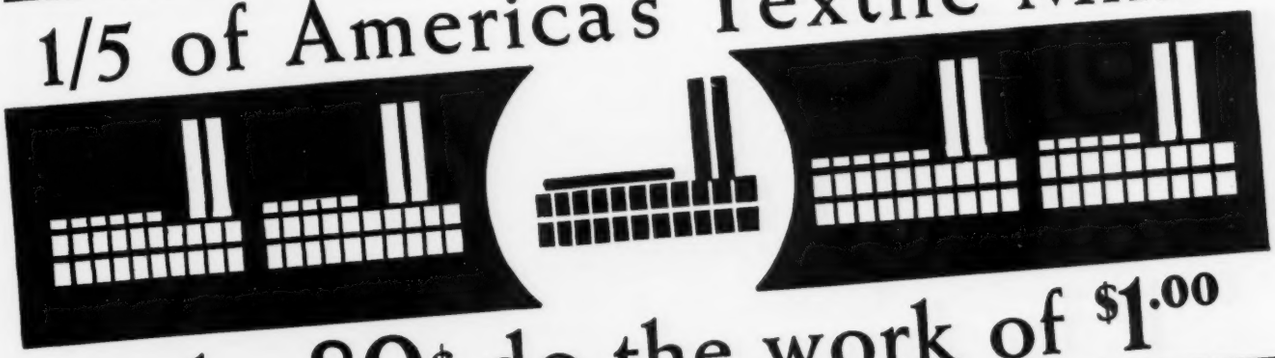
MOTORS FOR ALL APPLICATIONS FROM ½ HORSEPOWER AND UP

ELECTRICAL DIVISION

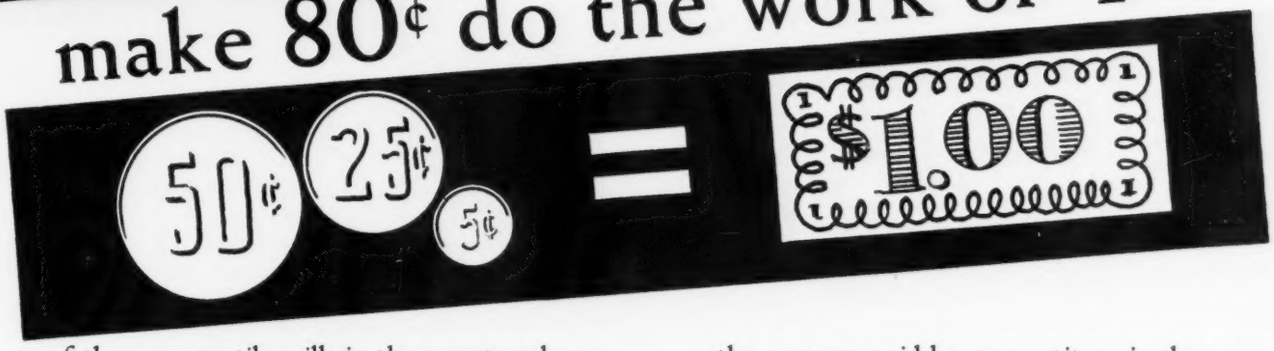
ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

1/5 of America's Textile Mills



make 80¢ do the work of $1.00



1200 of the 5700 textile mills in the country share in the earnings of American Mutual and have regularly saved 20% or more of their insurance costs. Among the bigger mills, a good third have been paying 80¢, to their competitors' $1.00, for workmen's compensation insurance.

In addition to lower net-cost insurance, they get

SECURITY — proved by the record of never missing a policyholder dividend of 20% or more through a half century of business fluctuations.

SPECIALIZED LOSS PREVENTION SERVICE — helps mills lower their premium rates under the average paid by competitors in the same state. [Examples on request.]

COMPLETE INSURANCE SERVICE — from offices in 16 cities below the Mason and Dixon and in almost every major textile center in the North. Prompt attention to all matters pertaining to business insurance by thoroughly trained representatives.

Write 142 Berkeley St., Dept. 79, Boston, Mass., asking for Folder A, which contains facts on how specific companies have made extra profits by insuring with American Mutual.

AMERICAN MUTUAL'S many branch offices throughout the textile districts, give swift insurance service. Men experienced in the textile industry's needs are nearby—ready to serve you.

Admitted Assets: $34,866,615.81
Liabilities: $29,443,222.08
Surplus to Policyholders: $5,423,393.76
As of Dec. 31, 1937

American Mutual

Saves for the Textile Industry

AMERICAN MUTUAL LIABILITY INSURANCE COMPANY

American Mutual has paid its policyholders a dividend of 20% or more each year on Workmen's Compensation, Automobile, Fidelity Bond, and practically all other lines of liability insurance.

Savings even greater than 20% have been made regularly on Fire Insurance, written by our associate, Allied American Mutual Fire Insurance Company.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

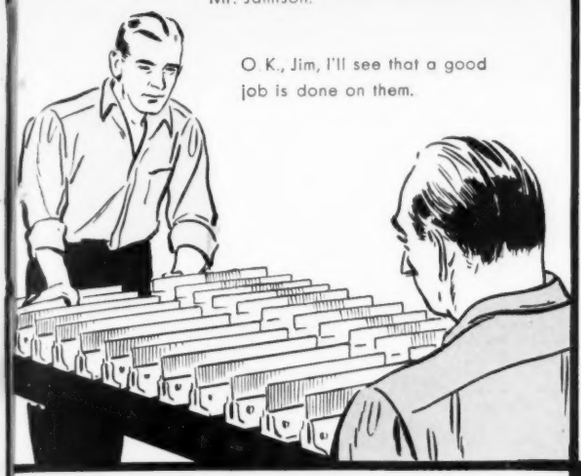
●

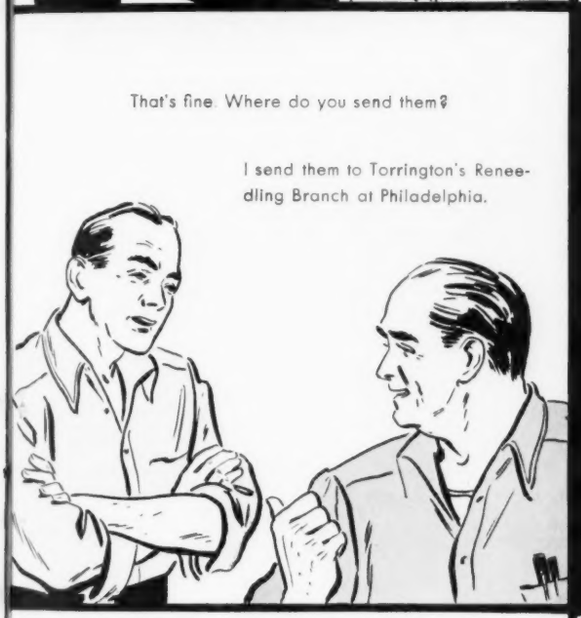
ESTABLISHED 1840

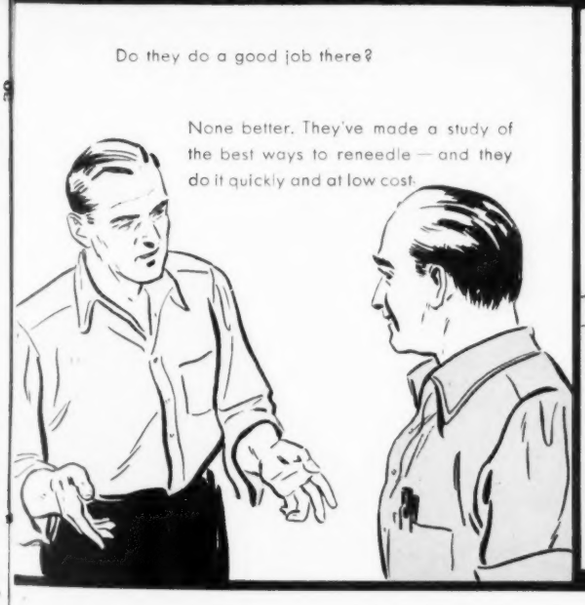
BECAUSE TORRINGTON RENEEDLING IS THOROUGH

Reneedling at Torrington's Philadelphia branch and Canadian plant is done by the same scientifically thorough methods that distinguish the manufacture of Torrington machine-made needles, sinkers, dividers and split dividers. Here a veteran foreman tells why he has Torrington do his reneedling.

THE TORRINGTON COMPANY, 1640 FAIRMOUNT AVENUE, PHILADELPHIA, PA.
THE TORRINGTON COMPANY, UPPER BEDFORD, QUEBEC, CANADA






Do they do a good job there?
None better. They've made a study of the best ways to reneedle — and they do it quickly and at low cost.

I'm glad to hear that—the better the reneedling the better the knitting.
Yes, I'll guarantee this will be as accurate and uniform a job as you've ever seen, Jim.

TORRINGTON *Needles and Sinkers*

OPENING NEW DOORS TO PROFITS
for the Knitting Industry

SINCE the beginning, the knitting industry has concentrated its efforts almost exclusively on the production of sweaters, underwear, bathing suits, hosiery and gloves. In recent years, however, leading mills have been breaking the shackles of custom with the introduction of knitted dresses and suits for women, knitted topcoatings and overcoatings, and a host of new articles for sportswear. Now the trend goes forward swiftly with the production of knitted fabrics for a great variety of household and industrial uses—curtains, blankets, draperies, rugs, upholstery, bedspreads, tablecloths, and wire, pipe and frozen food coverings, together with other fabrics for factory use. Meanwhile, other vast potential markets are visualized with the possibility of knitted shirts for business and dress wear, knitted lingerie, and in the building field—knitted accoustical textiles for radio studios, theatres, hospitals and offices.

Torrington presents here a few recent examples of this progress—a tough mesh fabric for beach sandals, a colorful material for sportswear, bags and pocketbooks, a lace curtain fabric and a knitted upholstery material—all knitted with Torrington Latch Needles. Each new development of this type stimulates added consumer interest and opens new doors to profits for the knitting industry.

THE TORRINGTON COMPANY, TORRINGTON, CONN., U. S. A.

The Torrington Company, 1640 Fairmount Avenue, Philadelphia, Pa.
The Torrington Co., Inc. . . 200 Fifth Avenue, New York, N. Y.
The Torrington Company . . 538 South Wells Street, Chicago, Ill.
The Torrington Company . . Guilford Building, Greensboro, N. C.
The Torrington Co., Ltd. 137 Wellington St. W., Toronto 2, Ont.
The S. M. Supplies Co. . . . . 210 South Street, Boston, Mass.

Factories at

Torrington, Conn. — Coventry, England
Upper Bedford, Quebec — Aachen, Germany

Torrington LATCH Needles

...A MARK OF INSURANCE SAVINGS

When IRM fire-prevention engineers report that your property is eligible for one of IRM's participating policies, it means that they have gone over your premises from basement to roof, and that fire hazards have been reduced to a minimum.

By accepting only desirable risks, by improving others until they also reach this high standard, and by sound management, IRM keeps losses down, and thus reduces your insurance costs. Furthermore, IRM's staff of fire-prevention engineers regularly reinspects properties to be sure that risks remain prime.

On these basic principles rests the sound indemnity of IRM—principles which have enabled this group to return 25% of premiums to participating policyholders every year, and which have helped many businesses to avoid fire's interruptions with accompanying loss of customers.

May we send a representative to study your insurance needs?

IMPROVED RISK MUTUALS

60 John Street, New York

IMPROVED RISK MUTUALS · IRM · NEW YORK, N.Y.

A nation-wide organization of old established, standard reserve companies writing the following types of insurance: Fire • Sprinkler Leakage • Use and Occupancy • Tornado and Windstorm • Earthquake • Rents • Commissions and Profits • Riot and Civil Commotion • Inland Marine

ABOUT THIS NEW

*Modinal ES**

IT'S EXCELLENT FOR SCOURING!

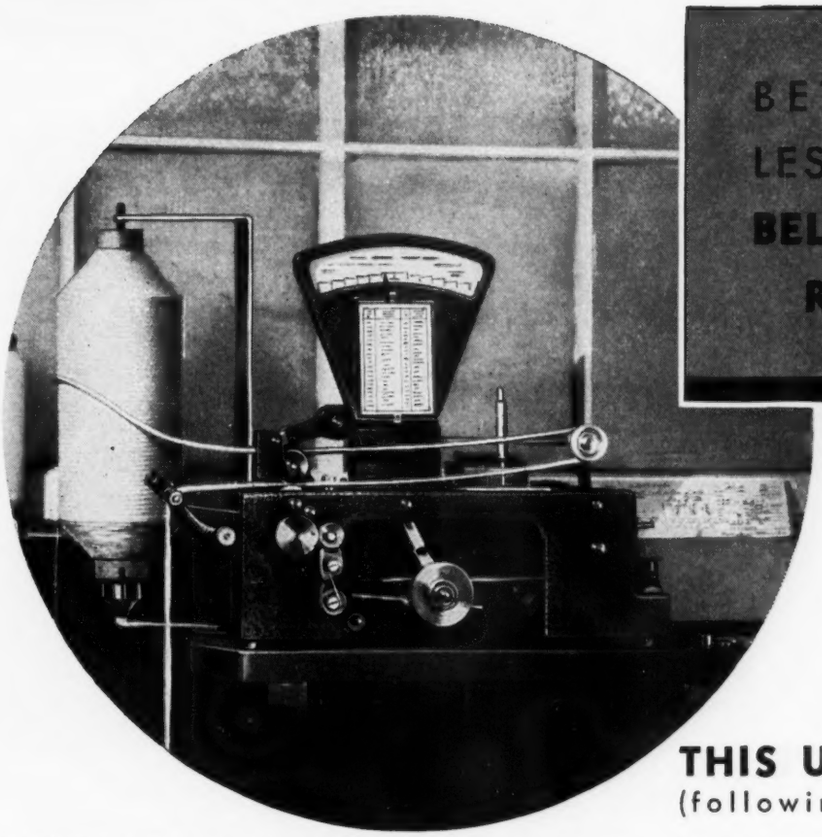
HERE'S an unusual new kind of fatty alcohol sulfate. It's MODINAL ES—the modern detergent with a clean, fresh odor. The excellent foaming qualities of MODINAL ES make it especially effective for scouring and dyeing all types of textiles. It is highly soluble in both hot and cold water—and its solutions remain clear even at low temperatures. MODINAL ES is available in paste form.

You'll want to have more information about this remarkable new agent. Have a representative of one of the sales agents listed below give you the story.

* "Modinal" is the trade-mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulfates.

GARDINOL CORP.
GENERAL OFFICE
WILMINGTON, DEL.

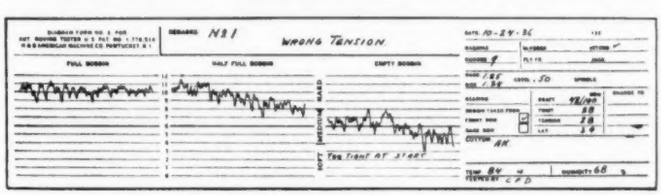
SALES AGENTS:
PROCTER & GAMBLE DISTRIBUTING CO., CINCINNATI, OHIO
E. I. DU PONT DE NEMOURS & CO., INC., WILMINGTON, DEL.



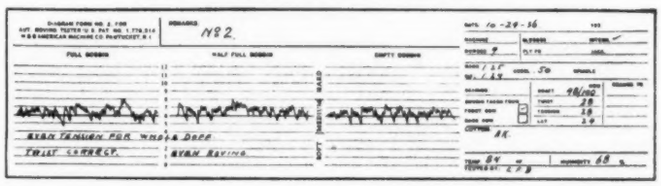
BETTER YARN AT LESS COST WITH A BELGER AUTOMATIC ROVING TESTER

"WE installed a tester over a year ago after a demonstration showed us its merit. Starting at the slubber, we began a systematic check of all our rovings. The carder said we couldn't take any twist out of his rovings or the work would run badly. It turned out that the extra twist he had been using was necessary to hold a badly stretched roving together. Once the causes for the stretching were remedied, it was necessary to take out 13 teeth of twist in order to get a good chart on the testing machine. To do this we readjusted the lay and tension gears, slowed the spindles from 700 r. p. m. to 525 r. p. m. and still had a front roll speed of 172 r. p. m. as compared with 165 r. p. m. before the change. So we increased our production, reduced wear and tear with slower frame speeds, and the work ran better.

"As soon as this new slubber roving got into our intermediate creels we tested this roving. It showed up hard with a straight line across the chart at 12. It was necessary to take out seven teeth of twist and readjust the lay and tension gears before the intermediate roving made a proper line.



SAMPLE CHARTS FROM THE TESTER



THIS USER TELLS YOU WHY

(following reprinted from Cotton)

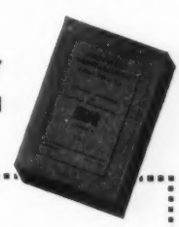
Here again we reduced our spindle speeds from 945 r. p. m. to 800 r. p. m., but increased the front roll speed slightly by taking out twist.

"As this new roving got into our speeder creels we began to get far fewer hard ends which meant reduced roller covering expense. We were able to take out two teeth of twist on the roving frames to get a chart registering between 6 and 8.

"This roving was going into 36s on the spinning frame. After completing the roving changes we found 25 per cent less variation in our size and break test and nearly five per cent better breaking strength. This was due to the better drafting possibilities with the softer, even roving."

The above is only one of many favorable reports by users of the Belger Automatic Roving Tester, which are printed in our Catalog No. 10.

THIS BOOKLET TELLS YOU WHY AND HOW • USE THE COUPON TO SEND FOR YOUR COPY



H & B AMERICAN MACHINE CO.
Pawtucket, Rhode Island Date.....

Gentlemen: Please send me a copy of your Catalog No. 10 describing card room testing equipment.

Company.....

Address.....

Signed..... Title.....

H & B AMERICAN MACHINE COMPANY

• • • TEXTILE MILL MACHINERY • • •

PLANT AT PAWTUCKET, RHODE ISLAND

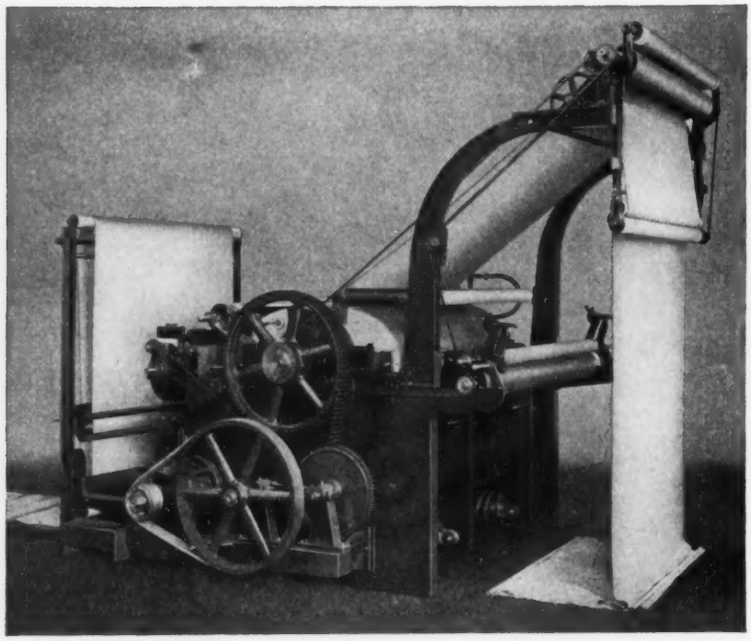
Boston Office: 161 Devonshire St. • Atlanta Office: 815 Citizens and Southern National Bank Bldg. • Charlotte Office: 1201-3 Johnston Bldg.

Richer lustre and less shine

The New

Gessner

Hi-Production Press Model 20



operates on fabrics as high as from 20 to 25 yards per minute

Every inch of fabric comes through the Gessner Hi-Production Press Model 20 with a richer, deeper lustre — a more expensive looking finish and less shine. Production is faster. Including every type of fabric, operation ranges as high as from 20 to 25 yards per minute.

The pressing is constantly level, whether you apply light or heavy pressure, or run a light or heavy fabric. There are none of the old adjustments to make either on the ends or the middle to keep pressing level. The pressing surface is greatly increased by the enlarged diameter of the cylinder.

Two buttons, easy to operate and within quick reach of the operator, control the Press. The first one starts the machine and puts on pressure at the same time. The second one releases the pressure and stops the machine simultaneously. Automatic Kickoff prevents beds from running on or off too far. Scored cylinders cease to be a problem. The Gessner Press cylinder is made of steel, not iron which used to require grinding to remove damage and which resulted each time in a smaller cylinder diameter. The steel cylinder can be quickly repaired by welding without ever losing size.

Your fabrics will profit from the many features built into the new Gessner Hi-Production Press Model 20.

DAVID GESSNER CO. Worcester, Mass.

Hand and Feel and Eye Appeal

Gessner

IMPROVED CLOTH FINISHING MACHINERY

Vacuum Extractors, Scutching Machines, Gigs
Decating Machines, Decating Aprons, Brushes
Spot Proofing Machines, Nappers, Presses

ARE THEY TOUGH?
ARE THE EYES SMOOTH?
HOW GOOD IS THE PLATING?
HOW LONG WILL THEY WEAR?
Certified STEEL HEDDLES manufactured by a process insuring smoothness of eye, long wear, high tensile strength, durability and corrosion resistance of plating. Heddles purchased in open market are examined and tested periodically by
PITTSBURGH TESTING LABORATORY
as an independent check upon Emmons' standards of manufacturing control.
EMMONS LOOM HARNESS COMPANY
LAWRENCE, MASSACHUSETTS

You need to know these things before
you can be sure of freedom from chafing—
better weaving—uniform warp tension—fewer warp breaks

. . . . Your Answer is the "CERTIFIED" Tag!

Emmons tells you beforehand what you'll get when you buy "Certified" Steel Heddles—by making public in this magazine, reports of tests made by the Pittsburgh Testing Laboratory.

The P.T.L. tests are an independent check on Emmons standards of manufacturing quality—your assurance of smooth heddle eyes—long wear—high tensile strength—durability and corrosion resistance of plating . . . *all* necessary for better weaving on your looms.

Tests already published have shown how "Certified" Steel Heddles were pulled until they broke at the eye, so that *you* could know their high tensile strength. They were bent 100,000 times—*without breaking!* Cadmium plated heddles were sprayed with a ruinous salt spray for 168 hours—*and they didn't rust!* And the eyes were sawed with threads—to prove how smooth they are.

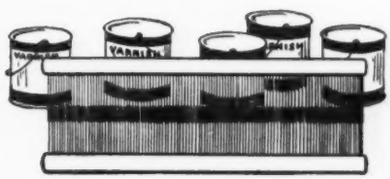
Month to month, as new tests are made by P.T.L.—from heddles purchased in the open market—we'll make them public to you. *Know* what you buy. Specify the heddles with the "Certified" tag! Quick delivery. Emmons Loom Harness Company, Lawrence, Mass., Charlotte Division, Charlotte, N. C.

Emmons

"CERTIFIED" STEEL HEDDLES

EMMONS CHAFELESS CORD COTTON HARNESS

Emmons picks the best and longest staple cotton for greater strength, longer life.



5 coats of specially prepared varnish make Chafeless Cord humidity proof.

A 48-hour baking process makes the harness super-smooth. Less fly. Better cloth.

EMMONS LOOM HARNESS COMPANY — LAWRENCE, MASS. — CHARLOTTE, N. C.

PONSOL* OLIVE G DOUBLE PASTE

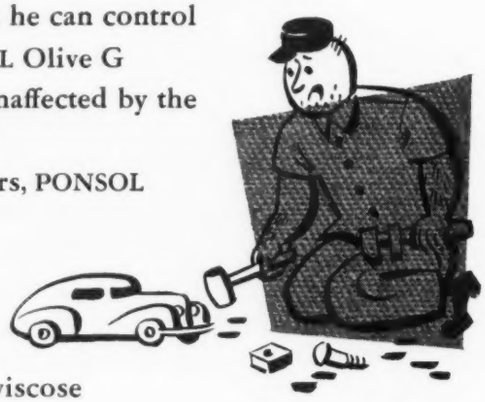
PATENTED

A Vat Color of Merit

The demand for better color durability in working garments again directs attention to PONSOL Olive G Double Paste because of its very good general fastness.

PONSOL Olive G Double Paste reduces readily, penetrates well and is very level dyeing. It may be applied by the pigment-pad method and in other types of dyeing equipment.

Of prime importance to the textile processor is the extreme simplicity with which he can control and match shades, since PONSOL Olive G Double Paste is practically unaffected by the customary finishing operations.



When combined with suitable colors, PONSOL Olive G Double Paste is useful for the production of fast shades of khaki or olive green on uniform cloth and work clothing. It is a "cold" dyeing type which the dyer will find of great value on all kinds of cotton material, viscose process rayon and pure silk.

Like the other vat colors in the Du Pont range, PONSOL Olive G Double Paste is carefully standardized and controlled for physical properties so as to insure uniformity of results.

DU PONT DYESTUFFS

REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC.

Organic Chemicals Dept., Dyestuffs Division · Wilmington, Del.

*Reg. U. S. Pat. Off.

5 RHOADS TANNATE ECONOMY FACTORS

To Increase Your Profits Per Unit of Production

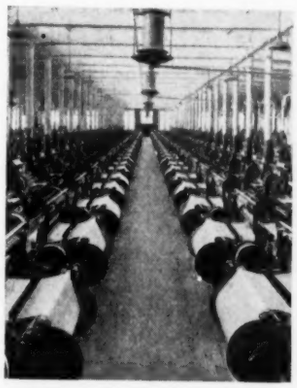
1 GREATER PRODUCTION • • •
—through *maximum power transmission capacity* even under heavy load.

2 HIGHER QUALITY OF OUTPUT
—through *steady flow of power* under varying condition of load.

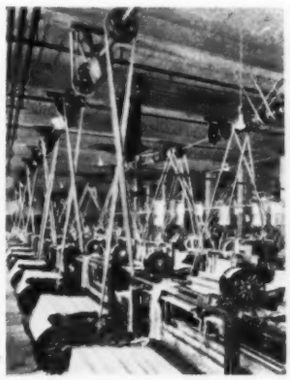
3 LOWER REPLACEMENT COSTS
—through *longer service-life.*

4 LOWER MAINTENANCE COSTS
—through *greater resistance to wear.*

5 ASSURANCE OF SATISFACTION
—through *Rhoads Service Guarantee.*



For more than 12 years only TANNATE Belts have been used on the Model E looms shown above.



The superintendent of the above mill says the life of TANNATE Belts on looms is about 10 years.

Textile Mills Make EXTRA Profits!

Rhoads TANNATE Belting

helps them increase output and lower costs

● When TANNATE users in textile mills tell us TANNATE belts "pull better"—when superintendents say "TANNATE!" when asked what belt they would buy based on their broad experience—when marked increases in production and lower costs are frequently reported after the installation of TANNATE Belts, it is not difficult to understand why the trend in many parts of the textile field is toward TANNATE. The 5 Rhoads TANNATE Economy Factors mean money saved and production improved in your plant, too—when you turn to TANNATE.

Call for our representative and let him show you how it can be done.

Ask him about TANNATE Straps, too!

J. E. RHOADS AND SONS

Established 1702

Philadelphia, 35 N. Sixth St.

New York Chicago Atlanta Cleveland Factory and Tannery, Wilmington, Del.

TANNATE LEATHER BELTING — LOWERS COSTS Per Unit of Production

PERKINS
NO CALENDER CAN BE BETTER THAN THE ROLLS IN IT
HOLYOKE
PERKINS
The supremacy of Perkins Calender Rolls is the natural result of the broadest experience in the textile industry.
B. F. Perkins & Son, Inc., Holyoke, Mass.
ENGINEERS AND MANUFACTURERS

BECCO

ELECTROLYTIC HYDROGEN PEROXIDE

"BECCO" symbolizes the ***modern*** trend in bleaching . . . yielding results which meet today's high requirements for quality, and with true economy . . . A ***BECCO*** representative, backed by Becco Technical Service, will gladly explain how Becco Hydrogen Peroxide will fit your particular problem. Write: BECCO SALES CORPORATION, BUFFALO, N. Y. . . Boston . . New York City . . Philadelphia . . Chicago . . Charlotte.

plus BECCO Technical Service

EDITORIAL NO 2 Written from the investors' viewpoint

—worth reading

CAPITAL ASSETS AND EARNING CAPACITY

When investing your private funds you particularly consider two things:

1. Security of your principal.
2. Income on your investment.

You want to get your money back some day and you want to have it pay you dividends; otherwise, you leave it in the bank.

From the standpoint of the investor, then, every mill management has two obligations—to conserve the assets of the business and maintain its earning capacity. All plans and policies are supposedly directed towards those ends.

In the average textile mill the gross book value of the fixed assets (land, buildings, machinery, etc.) approximately equals the capital investment (stock and bond issues and surplus). Thus, unless the other assets are more than enough to satisfy the general creditors' claims, the investors have only the physical plant as security. Hence they should be vitally interested to know whether the plant is worth what the books may show. If the book value is fictitious, then the management has not conserved the capital assets and the security of the investors' money.

Sound practice calls for adequate depreciation of fixed assets and a corresponding accumulation of other liquid assets with which to replace worn out or obsolete plant and equipment.

The financial statement usually shows the value of the plant and equipment, and the amount by which it has been depreciated. But where are the offsetting assets that represent the decrease in value which has taken place? In a majority of cases they have been used for general purposes instead of having been set aside for the specific purpose of purchasing new equipment.

Fortunately, there is finally a trend towards well planned spending and away from questionable accumulation. Progressive mill managers spend their depreciation annually for the purchase of new machinery. Their plans call for studies which will disclose the relative merits of different sections of their plants. Each year the least efficient machinery is spotted and is scheduled for replacement. In this way, funds which are ear-marked for plant rehabilitation are not diverted to other uses under the pressure of circumstances. At the same time, excellence of condition and high efficiency become characteristics of the plant. Thus, the management meets its responsibility to the investors by preserving the value of the fixed assets and by placing the company in a position to maintain its earning capacity.

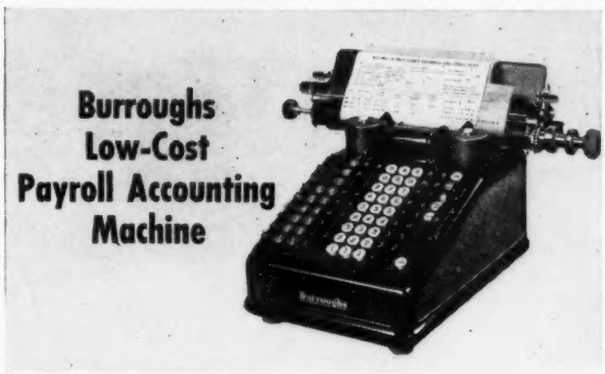
C & K can assist in these ways

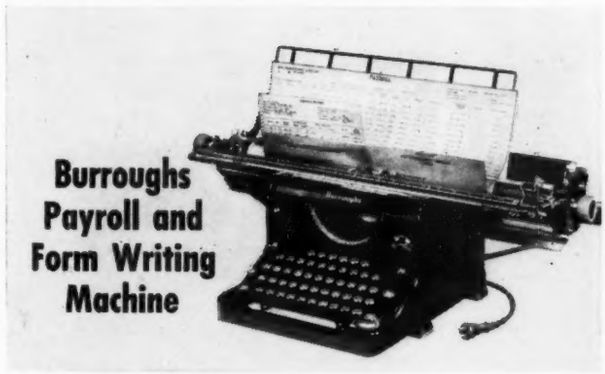
1. Furnish trained investigators to a limited number of mills, to make a comparative cost study.
2. Supply forms and information to assist in making your own investigation.
3. Analyze your data if you so desire.

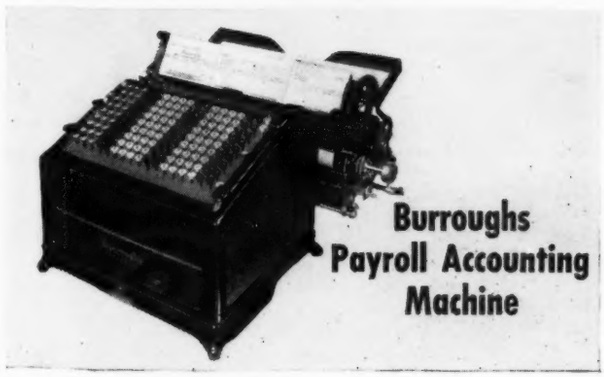
Mills should replace at least ten per cent of their machinery annually, beginning with the least efficient.

CROMPTON & KNOWLES LOOM WORKS

Allentown, Pa. Philadelphia, Pa. Charlotte, N. C. WORCESTER Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.







Burroughs

covers the entire range of

WAGE AND HOUR RECORDS and STATISTICS

along with all payroll records and labor distribution

Burroughs machines provide these five important records, including wage and hour statistics, in a fraction of the time required by ordinary methods:

1. **Individual Employee's Hour and Earnings Record.**
2. **Individual Employee's Pay Statement or Receipt.**
3. **Individual Employee's Pay Check or Envelope.**
4. **Departmental or Group Payroll Summary Sheet.**
5. **Departmental or Group Payroll Check Register.**

If desired, *all five* can be prepared on a single machine *in one operation*, under any one of several plans.

To determine the particular machine and plan that will fit your requirements at the lowest cost, call the local Burroughs representative. Or, if you prefer, write to—

BURROUGHS ADDING MACHINE COMPANY
6962 Second Boulevard, Detroit, Michigan

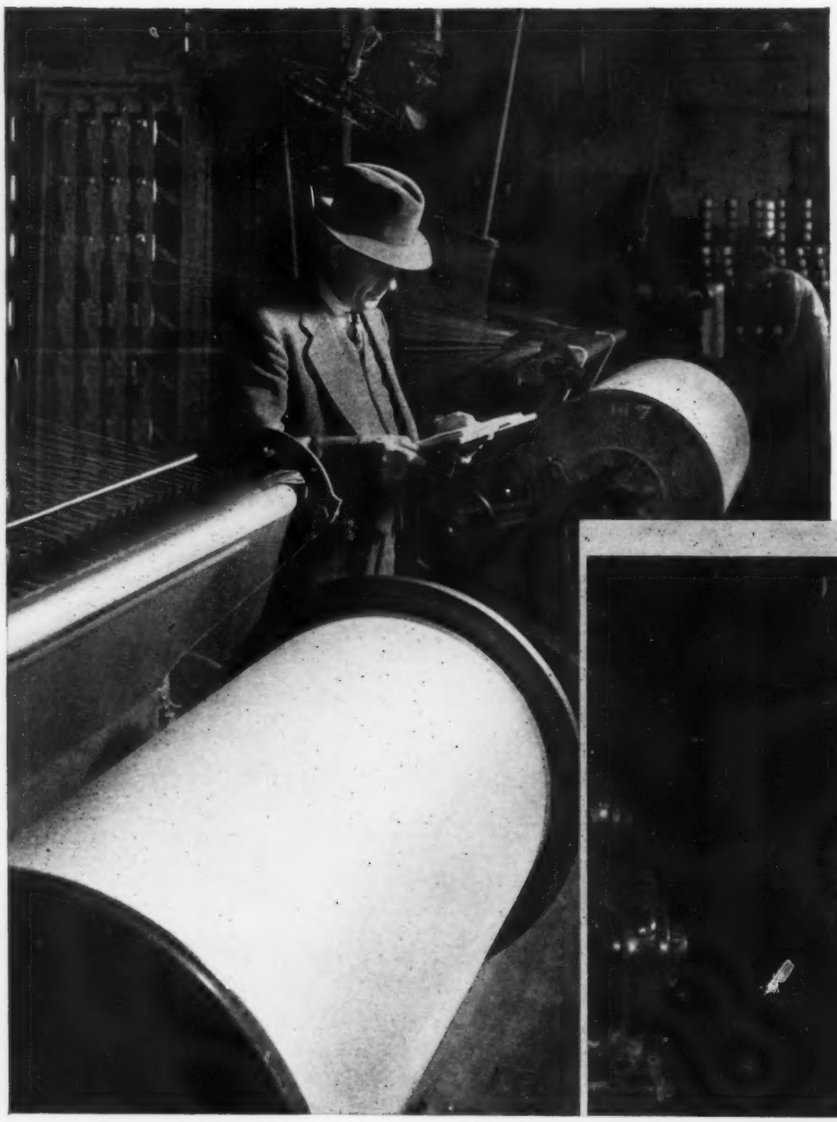
At the left are illustrated five different types of Burroughs machines for payroll and labor accounting. These machines are offered in many styles and sizes to meet the requirements of any business, large or small.

"We check and Double-Check the performance of our equipment . . . and have proved that

GULF'S *Higher Quality* OILS

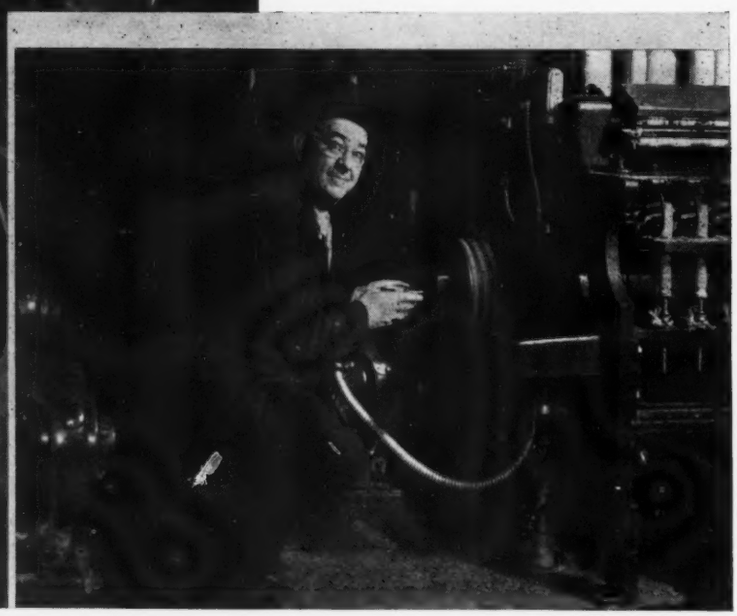
GIVE US GREATER OPERATING EFFICIENCY"

. . . say the head operating men in this big mill



(*Left*) This general superintendent, checking over the operating report on this automatic warper says, "From this report I can tell how the spinning room is operating. If the spinning frames are running smoothly we have very few broken ends on warpers. The average in this plant is only 10 broken ends per beam and we consider this remarkably low. Proper lubrication of our spinning frames with Gulfgem Oil undoubtedly has a lot to do with it."

(*Below*) The head spinner in the plant, shown taking a tachometer reading on one of his spinning frames, says, "Gulfgem Oil is giving us splendid results with spindle speeds of 10,000 r.p.m."



"GULFGEM OIL is the finest spindle lubricant we have ever used"

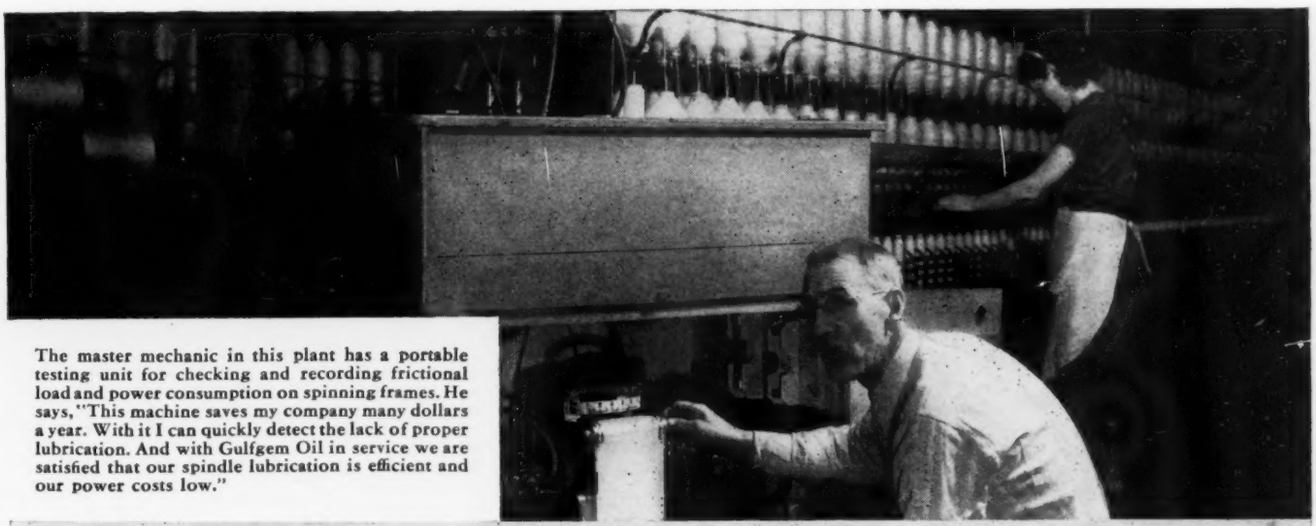
"With Gulfgem Oil in service we keep our spinning frames running smoothly with high speeds and long draft. The use of this higher quality oil has helped us get more production and increased efficiency from our equipment," says the superintendent of this large mill — one of the best equipped in the industry.

The remarkable record Gulfgem Oil is making in leading mills throughout the country is largely due to this fact: *Gulfgem Oil is the only spindle oil which has been refined and purified by the Alchlor Process.* By use of this exclusive Gulf process, oils with greater stability than any of which we have record can be manufactured.

Gulfgem Oil provides a tough protective film which insures efficient lubrication over a long period of time and, as a result, spindle wear is lessened. With Gulfgem in service, spindle base cleaning intervals can be greatly extended and shutdowns for this purpose become less frequent.

The Gulf engineer who calls on you is prepared to recommend — from Gulf's broad line of more than 400 quality oils and greases — the proper application of lubricants exactly suited to your equipment regardless of its age or the conditions under which it operates. You can have the benefit of his broad experience and knowledge gained through intimate contacts with plants similar to yours. There is no charge for this service — so we suggest that you take advantage of it at once.

GULF OIL CORPORATION
GULF REFINING COMPANY
GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.



The master mechanic in this plant has a portable testing unit for checking and recording frictional load and power consumption on spinning frames. He says, "This machine saves my company many dollars a year. With it I can quickly detect the lack of proper lubrication. And with Gulfgem Oil in service we are satisfied that our spindle lubrication is efficient and our power costs low."

6 REASONS why GULFGEM OILS are the world's finest spindle oils

1 MINIMUM POWER CONSUMPTION. As an oil oxidizes, viscosity and gum formation increase. More power is required to overcome the increased internal friction. The stability built in GULFGEM OIL by the Alchlor Process provides an oil with highest resistance to oxidation.

2 TOUGH FILM INSURES MINIMUM WEAR. Because of the advanced methods employed in the manufacture of GULFGEM OIL, it provides a tough film which insures efficient lubrication over a long period of time. Thus, spindle wear is reduced to a minimum.

3 MINIMUM ENDS DOWN. Maximum stability with minimum change in viscosity — either from temperature variation or from oxidation — insures constant load and smooth operation. The result is fewer breaks and ends down.

4 LOWEST OIL CONSUMPTION. Because of the unparalleled stability of GULFGEM OIL, it can be used over long periods of time with minimum deterioration. Thus, long life and a low rate of consumption are assured.

5 MAXIMUM INTERVALS BETWEEN SPINDLE BASE CLEANING. If an oil oxidizes and gums at a rapid rate, spindles must be cleaned and lubricated at frequent intervals. The stability of GULFGEM OIL, Alchlor processed, greatly reduces the frequency of shut-downs for this purpose.

6 LOWER PRODUCTION COSTS. Less frequent need for oil changes, time saved by fewer shut-downs, lower maintenance expense and lower power consumption reflect substantial savings in total operating costs.

GULF INDUSTRIAL LUBRICATION

Also a complete line of Fuel and Furnace Oils

A DYE BEAM THAT NEVER SAYS "DIE"...

TAKE a look at this Monel dye beam. It is one of eight in use at the plant of the Minneola Mfg. Co., Gibsonville, N. C. Is it *new?* No...even though it looks new, it has seen several years' service and is good for many more. Made by Morton Machine Works of Columbus, Ga., it has a perforated barrel of 1/8" thick Monel. The tie rods and nuts are also Monel. Other plants using Monel dye beams report over 15 years of service...with dye beams still good for further use.

Write for further information. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.

Ni MONEL **MONEL**

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.